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## Public education finance: urban rural tax burden distribution

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PUBLIC EDUCATION FINANCE: URBAN/RURAL  
TAX BURDEN DISTRIBUTION

by  
OMER S. ERTUR

A dissertation submitted in partial fulfillment  
of the requirements for the degree of

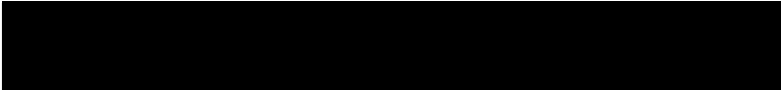
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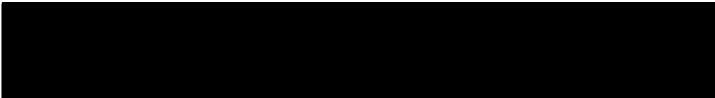
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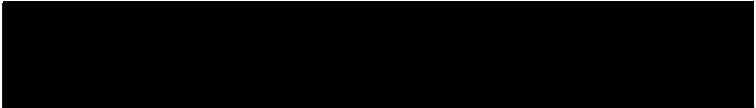
TO THE OFFICE OF GRADUATE STUDIES AND RESEARCH:

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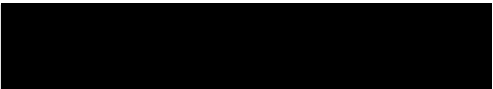
  
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AN ABSTRACT OF THE DISSERTATION OF Omer S. Ertur for the  
Doctor of Philosophy in Urban Studies presented November  
15, 1978.

Title: Public Education Finance: Urban/Rural Tax Burden  
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Within the past decade the emphasis in school finance research has been toward formulating financing models to solve the inequities in educational opportunity. School finance research has concentrated, generally, on structuring school finance alternatives based on school district fiscal behavior. However, these studies did not analyze in detail



the school finance alternatives' impacts on the individual taxpayers. The problem remains that, while various school finance alternatives may attain equal educational opportunity by equalizing the level of expenditures among school districts, they could expand the tax burden distribution inequities.

Policy analysis allows one to develop a rational policy procedure on empirical evaluation of policy alternatives designed to achieve a set of objectives. The analytical methods employed by policy analysis procedures are the foundation of this research's conceptual framework. This research is oriented toward decision-making and intends to be a guide to policy action.

Policy suggestions for reform concentrate on three crucial areas: (1) to change the content and the elements of the state equalization formulas; (2) to increase the level of state support; (3) to adopt a full state assumption of public education finance. These policy suggestions focus on the revenue formation and revenue distribution functions.

This dissertation analyzes the operating school finance system from a school district fiscal profile perspective. It also constructs an analytical model and tests the school finance alternatives' impacts on the individual taxpayer-voter from a tax burden redistribution perspective.

The fifteen unified school districts in the Portland metropolitan area of Oregon were chosen as the test ground for this research. The procedures for this policy research study are as follows: (1) the social objectives, equal opportunity and equity in tax burden distribution are defined as the basis by which the school finance policy alternatives are analyzed; (2) alternative school finance policies are identified and selected according to a criterion of political feasibility; (3) the necessary data is collected and simulated according to the specifications of the policy alternatives; (4) the resultant tax burden redistributions of policy alternatives are identified; (5) results are analyzed to determine the comparative advantages of alternative school finance policies.

Analysis of the school district fiscal profiles under the 1975-1976 school finance system indicates considerable differences in school district fiscal capacities. Moreover, state aid distribution based on the property wealth of school districts is not sufficient to equalize these differences. It is evident that the State of Oregon's share in financing public schools is insufficient to override the horizontal and vertical tax burden distribution inequities.

This research indicates that, changing the state aid distribution formulas without increasing the level

of state support, may reduce disparities in fiscal capacities among school districts. However, it is evident that such reform alternatives are not effective measures to reduce the existing tax burden distribution inequities among individual taxpayers.

This study concludes that centralization of revenue formation functions, by increasing the level of state support to public schools, will reduce the existing inequities in tax burden distribution.

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PART I

THE CASE: FINANCING PUBLIC SCHOOLS

## CHAPTER I

### THE PROBLEM AND SCOPE

The disparities of financial resources and inequalities in educational opportunity among school districts have been major problems of American public education for many decades. The past several years especially have been a period of dynamic change in the types of public education finance. Many reforms and changes in the level of state support and in state aid distribution formulas have been made. Yet, changes that were initiated since 1972 have affected the school finance reform in two important ways. First, many of these reforms have been directed toward increasing the level of state support. For example, the levels of state support increased from 31 to over 50 percent in Colorado, from 35 to over 60 percent in Maine and from 20 to over 40 percent in Oregon within the last six years. Secondly, many state legislatures have changed their state aid distribution from flat and foundation grant combinations to either percent equalizing or variable matching grant formulas. (Grubb, 1974, p.172) In many states, however, poor school districts still expend more tax effort in proportion to their financial ability than school districts with relatively more property wealth. Evidently property-poor school districts are not significantly affected by the recent school finance reforms.

A considerably large portion of the revenues raised



for public education comes from the local property tax. This form of funding used by school districts and some states has certain problems in providing revenues from the perspectives of equity and efficiency in taxation. For example, between 1960 and 1970 expenditures for primary and secondary education in the United States have risen at an average rate of 10.1 percent. (National Education Association Research, 1969, R-15) Between 1961 and 1969 the average annual increase in locally-assessed property values was only 4.6 percent. (Census of Governments, Taxable Property Values, 1969) The difference between the cost of education and the rate of expansion in the property tax base has resulted in increased tax rates for financing public education. Such considerable increases in property tax rates for financing public schools and other public goods and services, especially in urban areas, is a major factor in the growing pressure to reform the financing of public education.

The basic defects of the presently-operating educational finance systems are: (1) a considerable amount of variation in the property wealth among school districts results in immense differences in revenue capacities; (2) urbanized areas' need for relatively more noneducational public services, such as law enforcement and fire protection, requires smaller portions of the tax base to support public education (municipal overburden); (3) state aid

for public education is inadequate in sending funds to school districts with the greatest need; (4) state grants and aids for public education in the urban areas tends to be replacive; the amount of state aid allows the urban localities to allocate the same amount of local education funds to other municipal public services; (5) in contrast, the state grants and aid to local school districts in the suburban areas becomes additive; the state aid that is distributed will be added to the locally-raised public education revenues. (Campbell, 1972, pp.128-131)

Traditionally public school financing has combined revenue formation functions and expenditure decisions into one inseparable unit. The legitimacy of the traditional concept of individual school districts operating independently as fiscal units can be challenged by the following questions: (1) should school districts, through a state aid system, subsidize one another? If so, to what extent?; (2) should individuals and families, equally-circumstanced economically, pay different amounts of taxes?; (3) should the less wealthy individuals and families pay a higher percentage of their income for financing public education than the relatively wealthy?; (4) should property wealth or the level of income generated by the individual school districts determine the level and the type of public education services offered in the communities?; and (5) should the socio-economic characteristics and the educational needs of the student population of individual

communities determine the level and type of public educational services? These questions are forcing state and local-level political structures to face additional decisions and initiate policies toward reforming public education financing.

Policy suggestions for reform concentrate on three crucial areas: (1) to change the content and the elements of the state equalization formulas; (2) to increase the level of state support; (3) to adopt a full state assumption of public education finance. These policy suggestions are directed toward the revenue formation and revenue distribution functions. The alternative systems of financing public education and their revenue formation functions, therefore, will alter the cost-allocative structure in operation.\* Based on this rationale, the primary purpose of this research is twofold: to investigate the existing disparities in cost-burden distribution in public school finance and to analyze the alternative forms of public school financing and their impacts on the level and distribution of tax burdens in the State of Oregon. The analysis will contribute to the design of an analytical framework from which decision-makers can study, from a tax burden redistribution perspective, the impacts of various public school finance alternatives.

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\*There exists no scientific rationalization that modifications in cost-benefit allocation will alter educational achievement levels. The difficulty in empirically investigating this issue is, "...the fact that we have yet to establish the links between success and the characteristics of the program content and resources." (Cresswell, 1974, p.49)

### The Courts and the Law

Basic problems in school finance have developed because state governments, while delegating substantive responsibilities to school districts, have allowed the districts to be differentiated by locations with enormous wealth variations. Local governmental application of certain political and economic regulations, through such measures as zoning laws, enforces the general situation which allows wealthier parents to reside in school districts with relatively high taxable property wealth and the relatively less wealthy to live in districts with moderate or low property wealth. "Regarding local school tax rates as a price for educational services, it follows that rich households are likely to receive expensive services at low tax rates while, at the same time, poor households are taxed heavily to provide themselves with meager services." (Benson, 1970, p.127)

Despite the fact that financial disparities exist among school districts within and between states, there is a general lack of consensus among scholars about the effects of interdistrict revenue variations on the equality of educational opportunity. (Bowles and Levin, 1967; Coleman, 1968) The report prepared by the Presidential Commission headed by Dr. James Coleman concluded that per pupil expenditure levels and the level of student achievement are unrelated. (Coleman, 1966) This has been interpreted to mean that variations in financial resources have

very little effect on educational opportunity. Yet Coleman's report also concluded that the student achievement scores were directly related to teachers' level of education and experience. Thus it is difficult to accept the opinion that variations in school district financial resources have little relationship to educational opportunity when teachers' salaries are generally the largest school expenditure item. (Briley, 1971, pp.49-50)

Regardless of the argument in legal circles about whether money has any effect upon equality of education, (one can) regard the fierce resistance by rich districts to reform as adequate testimony to the relevance of money. (However, even) if money is inadequate to improve education, the residents of poor districts should at least have an equal opportunity to be equally disappointed by its failure. (Coone, 1970, p.30)

Despite legal and academic disagreements, equalization of educational opportunity has been an important objective pursued by scholars concerned with the financing of public schools. Yet, theoretical disagreements regarding the definition of equality of educational opportunity are great among these scholars. The most agreed-upon definition of equality of educational opportunity has been constructed by Johns-Alexander-Stollar. (Johns, et al, 1971) They have defined the concept of equality in educational opportunity as the provision of the financial resources necessary to provide adequate educational opportunities for all children and youth of the nation. Such financial equalization is most nearly accomplished when the following two criterion are met: "(1) the varying educational

needs of the student population are taken into consideration before the allocations are made, and (2) the variations in the ability of the local school districts to support education are reduced or eliminated through the utilization of state resources." (Johns, 1971, p.122)

The California State Supreme Court, in the case of "Serrano vs Priest," found it distressing that school districts with poor communities had to accept the burden of high tax rates for public schools to maintain relatively low-quality educational programs for their students. On the other hand, school districts within wealthy communities enjoyed both the low tax rates and high standard educational programs. (California Supreme Court, 1971) The California Supreme Court held that a school district's property wealth as a determinant of the level of education provided violates the equal protection clause of the Fourteenth Amendment of the United States Constitution and equivalent provisions in state constitutions.

Following the Serrano Case in California, five other states followed suit--in Minnesota (Van Dusartz vs Hatfield, 1971); in Texas (Rodriguez vs San Antonio, 1973); in New Jersey (Robinson vs Cahill, 1972); in Wyoming (Hollins vs Shofstall, 1972); and in Arizona (Sweetwater County vs Hinkle, 1972). However, the Texas case (Rodriguez, 1973) and the Arizona case (Sweetwater County, 1972) were reversed. The United States Supreme Court's majority opinion

held that the right of education is not a fundamental right because it is neither explicitly nor implicitly guaranteed by the United States Constitution.

Because of the lack of agreement over the meaning of educational opportunity, the United States Supreme Court has refrained from taking a definite position on school finance issues and has decided to let the states settle the matter. By a five-to-four vote in the case of *Rodriguez vs San Antonio Independent School Board* (1973), the Supreme Court ruled that disparities in property values between jurisdictions relying on property taxes to finance education did not violate the equal protection clause of the 14th Amendment. Representing the majority opinion, Justice Lewis F. Powell stated:

We are urged to abrogate systems of financing public education presently in existence in virtually every state. . . (to declare unconstitutional) what many educators for half a century have thought was an enlightened approach to a problem for which there is no perfect solution. We are unwilling to assume for ourselves a level of wisdom superior to that of legislators, scholars, and educational authorities in 49 states, especially when the alternatives proposed are only recently conceived and nowhere yet tested. (Dye, 1975, p.159)

The Supreme Court has also decided that individual states should be responsible for reform even though it recognized financial and educational inequities among school districts do exist.

The Constitutions in all states contain language to the effect that legislature has the responsibility for maintaining a thorough and efficient system of public education free to all young people

within certain age limits. In fulfilling this obligation, legislatures have generally enacted statutes to permit the formation and reorganization of local school units. While most of the responsibility for operating the schools has been delegated to those local units, legally public education remains a function of the state.

State provisions for education generally fall short of this goal. Scarce state resources and faulty state aid distribution systems account for much of the observed disparity in educational opportunity within states. (Hooker, 1971, p.403)

Many of the states' courts have declared that a state aid system is unconstitutional if it causes the quality of public education to become a function of the wealth of the locality. In the New Jersey case (Robinson vs Cahill, 1973) the state court supported, in principle, the concept that the public education system was too important to be left to the moods and aspirations of local school district taxpayers. In the "Robinson" case the New Jersey court went further by supporting the concept of differential educational costs for socio-economically differentiated students and endorsing a uniform state support system with cost differentials. (Johns, 1972, pp.72-73) "The Robinson decision demonstrated that the momentum for reform begun by Serrano was not stopped by the Rodriguez decision (though it may have been slowed), and that the action had shifted from federal to state courts." (Swanson, 1976, p.153)

In subsequent court cases, the Supreme Courts of Idaho (Thompson vs Engelking, 1975), Washington (Northshire



School District vs Kinner, 1974) and Oregon (Olson vs Oregon, 1975) have upheld the school finance laws of their states. (Swanson, 1976, p.153)

In a Florida court case (Hargrave vs Kirk, 1970) the plaintiffs won the decision that the state's local property tax rate limits for school support imposed a legal barrier to school districts with low property cash value per pupil. The U.S. Supreme Court reversed the lower court's decision on certain judicial technicalities without a complete analysis of the merits of the case. However, even though there are apparent benefits to students in terms of increased expenditures, these court cases against property tax limits do nothing to eliminate tax burden inequities caused by the property tax. "This results from the fact that increasing the school tax rate in tax-poor districts could dramatically increase the burdens on the districts' taxpayers with little to show in terms of increased per pupil expenditures." (Long, 1973, p.97)

The achievement of equal educational opportunity across the United States is likely not to happen in the near future. The judicial process is expensive and time-consuming. Hundreds of districts currently may be violating equal educational opportunity. District-by-district complaints must be filed with the courts against the offending district. However, in many districts where some students have been denied equal educational opportunities, no judicial action has been taken. (Brown, 1976, p.148)

In response to existing state and federal-level litigations, many state legislatures introduced reforms with increased state support level aided by "power-equalizing" formulas. However, urban centers are disadvantaged when state equalization formulas are based on property cash value per pupil rather than on measures based on income and/or cost differentials for special programs and compensatory education. Where the state legislators have expanded the court definition of equality of educational opportunity to include the criterion of cost equity, the reforms have resulted in property tax relief which has included provisions of cost of living corrections and income measures of wealth.

"The most promising route to school finance reform acceptable to cities appears to be through legislation rather than litigation." (Swanson, 1976, p.165) However, it appears at this time that many legislative attempts to construct a substantive reform policy for financing public education are hampered by political and economic conflicts in the states' legislatures. Such legislative stagnation has been supported by public indifference. Dye has reported that public support for education has declined over the past decade. The proportion of bond referendum for financing schools that were approved by the voter has declined from 89 percent in the early 1960's to 48 percent in the early 1970's. (Dye, 1975, p.156)

## Politics and Education

One of the basic problematic causes inherent to the politics of education lies within the states' structure of educational governance and policy-making. This legal structure has created a situation of dual sovereignty between the state and the school districts.

Since that dual sovereignty (between the state and the local school districts) enhances the influence of the organizations led by professional school (persons), it does not result in the maximization of either state or local government in education to the exclusion of the other. In other words, the dual sovereignty produces dominant influence by organized school (persons), which in turn functions to prevent the breakdown of the competing state and local governments. (Iannaccone, 1974, p.27)

The ultimate legal authority over providing public education resides with the state governments, not with the local school districts. The state governments are involved in administering and financing public education by controlling local tax rates and debts, and by standardizing the overall quality of public education. "Historically, school matters have provided little political mileage for ambitious legislators. As a result, the major influence over state education policy has fallen to state boards of education, state superintendents of education and state departments of education." (Meranto, 1970, p.88)

Presently traditional public education policy processes are changing from nonpolitical, professional elitist group operations to relatively political pluralistic

procedures. Whenever these changes occur, they force the professional educator to lobby for fiscal independence in order to regain the lost influence over the educational core group. (Sacks, 1972, p.133) Many professional educators have staunchly argued that any reform contralizing public education functions will remove people from the decision-making processes, resulting in a lower quality of educational services. On the other hand, many social scientists argue that no substantive rationale warrants a special levy of government for public education. Public education should belong to state and/or local government operations. Supporting the premise of the centralist argument, Sacks has concluded that public resources cannot be efficiently allocated, nor competitive demands on the public sector effectively weighed, without a central authority which would consider local demands on a given tax base. "Those who argue against independence for the schools also contend that the presence of independent school systems fractures local governmental authority, makes financial planning at the local level impossible, and menaces municipal budgets." (Sacks, 1972, pp.116-117)

It is one of the primary contentions of centralists that most policy suggestions to resolve problems inherent to public education are handicapped by the political and socioeconomic fragmentation of the urban area. Due to the process of dispersion and suburbanization, the urban central

city, with an unbalanced social situation and fiscal position, finds itself sealed in with its problems. This multi-dimensional socio-economic segregation processes will compel the urban central school districts to seek support and guidance from the state and federal governments. (Minar, 1967, p.318)

The distribution of socioeconomic characteristics between the city and its suburbs, which has been generated by the continuing trend of decentralization, has a strong influence on the level of education expenditures and on the ability of the central city to pay for educational services. Second, the differential impact of state aid and retirement system policies also has a major influence on educational finance. This metropolitanization is producing a fragmented metropolitan governmental system which is, will continue to be, an important political variable in explaining educational fiscal behavior. (Sacks, 1972, p.126)

In many states public education interest groups are becoming more and more formally structured. Most of the public education interest groups are under the influence of professional educators representing local school bureaucracies. The majority of the policy information flowing in and out of the states' departments of education originates with this well-organized alignment of local professional educators. This suggests that the structure of educational policy-making at the state level, as well as at the local level, "...has been controlled by the professional educator who is most closely associated with local school bureaucracies." (Sacks, 1972, p.132) However, such association between school boards and school

bureaucracies has indirect political ramifications on the operation of state and local politics. It may be that, "...the occupational background of school board members suggests that they are sensitive to tax burdens placed upon businessmen and property owners." (Dye, 1975, p.157)

It is a well-accepted fact that governmental procedures and policy processes are not neutral operations. The governmental process is always biased toward the interest of certain private and/or public entities. (Lowi, 1969) "The interests that currently gain from such biases may not have been the ones that developed the political system. In fact, they may have once been the very interests against which the political system was designed to discriminate in some previous period." (Iannoccone, 1974, p.45) Sacks, et al, clearly illustrated that the present inferior fiscal situation of the urban education system is a reflection of its superiority in the past. It is obvious that past governmental policies, formed to help rural education, are now being applied to the suburban education system. Such policy application appears to operate against the interests of the urban central education system. (Sacks, 1972, p.177) Apparently many policy decisions which may have been appropriate in the past are quite often obsolete today. The realization of this may generate a fiscal and political environment to stimulate a rethinking of the appropriate relationship between the state governments and local school districts.

### The Local Property Tax

The property tax occupies a very important position in financing public education as the main source of revenue for local governments and for most of the state governments. Yet as a local revenue source, the property tax has been heavily criticized as the primary cause for existing inequities in educational opportunity among localities. This criticism is based on local assessment functions. Depending on the effectiveness of the county assessor's office, wide variations can exist between the assessed and market value of properties in a jurisdiction. Some evidence supports the premise that properties with high market value are less highly assessed than properties with low market values. Consequently, the effective tax rate on low market value property becomes higher than the effective rate on high market value property. Thus vertical tax burden inequities among taxpayers are created. (Ladd, 1974, p.78)

In addition to its inherent inequities in cost burden distribution, the local property tax has contributed to the expansion of many urban problems such as central city decay, slum formations and suburban sprawl. In the past decade it has become evident that, "...suburbanization by draining the higher income families and much economic activity from the cities, produced more serious educational and political problems for city school districts than it did for suburban districts." (Meranto, 1970, p.25)

The local property tax affects the use and improvement of the land. Issues of local property taxes and land use are closely related. For example, the level of local property tax may affect the formation of slum housing when it is more profitable to rent than to replace or to rehabilitate. Consequently, this results in higher demand for noneducational services in urban areas, making it very difficult for the urban school districts to adequately finance the educational needs of the residents without an excess tax burden.

Differences in tax rates across the metropolitan area may be a result of the interaction between consumer preferences and/or needs for public goods and services and the taxable property wealth of the jurisdiction. The differences in taxable property wealth are one of the major determinants of local property tax rates within a metropolitan area. It may be the case, therefore, that the more taxable property wealth a community has, the lower the property tax rate needed to finance a local public good. "Hence, an inverse relationship between the size of the tax base and the tax rate across communities is to be expected." (Ladd, 1974, p.71) Urban school districts which appear wealthy in terms of per pupil property cash values, are facing conditions of municipal overburden and relative poverty in available resources. Conversely, suburban school districts with relatively greater public education finance resources are receiving greater



amounts of state aid. Among the three types of localities, suburbs have the least educational need, the greatest capacity to finance education, the lowest municipal overburden and, ironically, proportionally greater state aid for public education. (Berke, 1974, p.88)

Based on their socio-economic characteristics, residents of certain school districts would have relatively higher aspirations for their children than in some other school districts. "The districts that have a higher aspiration level, it is hypothesized, also have a higher socio-economic and cultural level." (Briley, 1971, p.115)

Consequently, within the limits of their taxable property base, they will make a higher local tax effort for schools. They may also receive relatively more state support. State grants and aid to local public education have been designed to entice the local taxpayer into making extra effort to finance the public schools. The irony of this situation is that the existence of municipal overburden in urban central areas serves as a hinderance to the possibility of raising the level of property taxes. This, in return, causes the urban central school districts to be in the low tax effort category and consequently results in relatively lower levels of state aid.

The educational output of the financially-strained, poor school district can dilute the quality of the relatively well-prepared educational output of the more highly-organized, wealthy school district. This

phenomenon is an important correlate of externality as well as of locational acceptability. The residents of the wealthy school districts accept only families with relatively similar social status and behavior, coupled with the economic ability to purchase high value-assessed properties. Such segregatory practices functionally operate through the local political process by excluding the lower socio-economic classes vis-a-vis discriminatory residential zoning. As a result, a large portion of the lower socio-economic classes is excluded from the benefits of acquiring a better education for their children with relatively lower costs. Simultaneously, middle and high income families often leave urban areas (with high tax rates and low educational expenditures) in favor of suburban communities with low tax rates and high educational expenditures.

Hence, families that are immobile either because of their limited employment opportunities or because of discriminatory policies against them by other communities are not able to purchase a higher level of public services than that provided by the community in which they live, even if their tastes and ability to pay differ from those of the majority. (Ladd, 1974, p.74)

Due to sheer magnitude the financing of elementary and secondary education has become an important policy parameter to be investigated for its inherent cost distributive inequities. Much research has shown that individuals and families, equally-circumstanced in terms of income and wealth but located in different communities, are treated unequally by their respective local public

sectors, especially the school districts. (Ladd, 1973, p.74) "It is somewhat ironic to note that not only the children of the poor have less money spent for their schooling (and consequently unequal and less adequate school services) but, also that relative to their income, their parents pay more for those unequal services."

(Guthrie, 1971, p.124)

Recent research has shown that the level of government (rather than the type of tax) financing a public good creates differences in tax bases and service level inequalities across jurisdictions. (Ladd, 1974 and Aaron, 1975) Thus the basic cause of cost-benefit inequities among school districts may be local financing of certain public goods and not the property tax per se. The decentralized provision of a public good, local in character, is more efficient than the centralized provision. Even though there exists inequality of educational opportunity costs resulting from local autonomy in financing public education, the general public appears to support the decentralist contention that the benefits of the local autonomy are important and sufficient enough to overcome the effects of inequality of educational opportunity. However, because of its very nature (the high level of cost and benefit spillovers), the effects of public education goods and services reach beyond the boundaries of local communities. For that reason the resulting inequalities in educational opportunity among school districts within

metropolitan areas have statewide and national repercussions.

Dependence on the property tax to finance the local public goods and services is likely to continue. Because of the inequities in cost-benefit distributions, the responsibility to finance public education may shift to state governments in the future. When this occurs, the state governments will have to find additional sources of revenue to replace the foregone local revenues. (Ladd, 1974, pp.76-81) Under these circumstances, to eliminate local financing of public education, state governments will have to construct a replacive financing system appropriate to current revenue structures. Varying from state to state, such a replacive financing system may be based on the state income tax, on sales tax, on statewide property tax or on any combination thereof. (Dye, 1975 and Thorson, 1974)

#### The Financing of Public Schools in Oregon

The State of Oregon imposes many different taxes to raise revenues. Oregon's revenue system is characterized by a progressive personal income tax and a business tax which is partially shifted to residents of other states. Oregon is one of the few states which does not use sales tax. Other taxes, according to their importance, are the gasoline tax, the cigarette tax, the inheritance tax, the insurance companies' tax and the alcoholic beverages tax. A general outline of the Oregon revenue system, with yields

of principal taxes for the fiscal year 1974, is presented in Table I.

In Oregon reform efforts to change or modify its school financing system and its dependence on the local property taxation have been slow in developing and are usually politically unsuccessful. Many reform proposals have been debated in state legislatures. When approved, with amendments to satisfy contending interests, only minimal adjustments to the operating financing system were introduced. During the 1950's the Oregon Legislature and the State Tax Commission demonstrated extensive efforts in working with individual counties to construct a system to equalize the property assessments so that all taxpayers would pay only a just and equitable share of the tax burden. These efforts by the State Tax Commission have reformed the property assessment functions of the county governments. Oregon is one of the few state governments that has raised its level of assessments for property taxation from 25 to 100 percent of the market value within the last several decades. This sharp increase in the level of assessment has been received with little public complaint and no judicial challenge.

In the State of Oregon during the school year 1975-1976, the elementary and secondary public schools were financed by three basic sources: federal, 8 percent; state, 30 percent; and the local school district, 62 percent. (Oregon Department of Education) The state's

TABLE I

STATE OF OREGON TAX  
REVENUE SOURCES

<u>Title of Tax</u>	<u>Yield (1975)</u>	<u>Percent of Total Tax Revenue</u>
Corporate Organization Tax	384,000	.044
Corporation Franchise Tax	1,473,000	.127
Corporate Income Tax	90,903,000	11.508
Personal Income Tax	427,002,000	54.062
Alcoholic Beverages Tax	4,580,000	.579
Gasoline Tax	81,696,000	10.343
Timber Tax	2,640,000	.333
Vehicle Registration Fees	73,554,000	9.313
Cigarette Tax	31,230,000	3.953
Public Utilities Tax	2,918,000	.369
Insurance Companies Tax	25,275,000	3.201
Inheritance Tax	21,958,000	2.781

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Source: Taxes by States, Commerce Clearing House, Inc.  
1976, pp.590,593.

share in supporting public schools in Oregon is one of the lowest in the nation.

Oregon relies heavily on the personal income tax as a financing source. Consequently, it appears that Oregon's revenue structure is relatively progressive when compared to other states. Despite its relatively progressive tax structure, the low level of public education support by the state does not do much to correct the vertical and horizontal tax burden distribution inequities resulting from the financing of Oregon's public schools. Consequently, the differences in the property wealth of local school districts determines the level of tax burden distributed to the residents.

The local application of the property tax, more than the tax itself, appears to be a major factor contributing to the inequities in tax burden distribution. In Oregon property wealth variations among school districts are considerably large. In 1974 the wealthiest school district, in terms of taxable property, was the Brothers school district with a total property cash value of \$437,761.00 per student. The poorest school district, Knox Butte, had a property wealth of only \$16,119.00 per student. This is a ratio of 35 to 1. In comparing districts in the 90th and 10th percentiles of wealth per student, it was found that Helix School District had \$132,126.00 per student while Orient School District had \$27,907.00 per

student. This is a ratio of 5 to 1. (Pierce, 1975, p.18)

"With the same effort, the district in the 90th wealth percentile is able to raise nearly five times as much revenue as the district in the 10th percentile." (Pierce, 1975, p.18) The differences in property wealth magnifies the inequity situation whereby the wealthy school districts are able to spend more per student with lower tax rates than the relatively less wealthy school districts.

The state support system to aid the financing of public schools is designed to equalize some of the cost-benefit disparities among local school districts. The state's public education funds are distributed to school districts primarily through the Basic School Support Fund (BSSF). This fund constitutes more than 95 percent of the total state support in Oregon. The Basic School Support Fund in Oregon has three major categories: Transportation Grants; Equalization Grants; and Flat Grants.\* (The actual and the relative composition of the BSSF in Oregon and its history is illustrated in Tables II and III.)

The basic distributive criterion for Oregon's BSSF is that the state guarantees individual school districts

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\*In Oregon, state government involvement into the financing of public schools dates back to 1946 when the Legislature created the Basic School Support Fund. After 30 years the proportions of the BSSF formula which allocate funds to the three basic criteria are approximately the same. (Table II) Since 1947 the level of state aid to public education has fluctuated. The state aid in 1951-1952 reached more than 40 percent of the total expenditures for public education. In 1970-1971 this figure was barely over 22 percent. (Table II)



TABLE II  
BASIC SCHOOL SUPPORT  
1947 - 1977

<u>School Year</u>	<u>Current School Operating Expenditures (\$1,000)</u>	<u>% Increase</u>	<u>Amount Appropriated For BSSF (\$1,000)</u>	<u>% Increase</u>	<u>BSSF as a % of Current Expenditures</u>
1947-48	43,513	-	15,946	-	36.6
1948-49	51,800	19.0	16,954	6.3	32.7
1949-50	58,799	13.5	17,349	2.3	29.5
1950-51	63,213	7.5	18,305	5.5	29.0
1951-52	72,330	14.4	29,281	60.0	40.5
1952-53	78,720	8.8	30,683	4.8	39.0
1953-54	87,691	11.4	32,134	4.7	36.6
1954-55	94,344	8.2	33,245	3.5	35.1
1955-56	102,336	7.9	34,809	4.7	34.0
1956-57	114,016	11.4	36,018	3.5	31.6
1957-58	132,397	7.5	44,573	23.6	36.4
1958-59	134,054	9.3	45,514	2.1	34.0
1959-60	132,022	13.4	51,937	14.1	34.2
1960-61	161,451	6.2	54,351	4.6	33.7
1961-62	177,526	10.0	61,038	12.3	34.4
1962-63	190,419	7.3	64,637	5.9	34.0
1963-64	208,625	9.6	65,184	.8	31.2
1964-65	220,225	5.5	61,167	- 6.2	27.8
1965-66	239,193	8.6	72,088	17.8	30.1
1966-67	262,428	9.7	75,898	5.3	26.9
1967-68	286,729	9.3	77,786	2.5	27.1
1968-69	325,536	13.5	77,431	- .5	23.8
1969-70	363,633	11.7	88,928	14.8	24.4
1970-71	398,013	9.5	88,028	0.0	22.3
1971-72	421,635	5.9	99,428	11.8	23.6
1972-73	459,210	8.9	104,063	4.7	22.7
1973-74	505,138	10.0	143,520	37.9	28.4
1974-75	591,327	17.1	170,708	18.9	28.9
1975-76	672,000	13.6	200,732	17.6	29.9

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Source: Oregon Department of Education; and Legislative Revenue Office, Research Report 24, 1976, p.2.

to raise a minimum standardized per pupil revenue at a state-regulated tax rate. If the revenues raised by an individual school district are insufficient at the state-designated tax rate, the state supplements the district revenue with state funds to the extent necessary to raise the district revenue to the level guaranteed by the state. (Pierce, 1975, pp.90-22)

TABLE III

THE COMPOSITION OF THE BASIC  
SCHOOL SUPPORT FUND

<u>Title of Fund</u>	<u>1947-1948 % of Total BSSF</u>	<u>1973-1974 Amount (Millions of \$)</u>	<u>1973-1974 % of Total BSSF</u>
Transportation Grants	8	9.5	6.6
Equalization Grants	17	26.8	18.7
Flat Grants	75	107.2	74.7

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Source: Pierce, 1975, p.21 and Legislative Revenue Office Research Report 24, 1976, p.1.

However, instead of determining this minimum expenditure level by an analysis of program needs, the statutes require that the basic program be computed by a formula based on the relationship of current educational costs to 1955-1956 costs... In 1973-1974 this computation produced a basic program level of \$682.23 per pupil, well below the statewide average expenditure of \$1,053.00. (Pierce, 1975, p.20)

If the local school district tax effort is insufficient to raise the state basic program level, the school district may receive state equalization support, depending on the level of state flat grants for which the district qualified.\*

It is important to note, however, that the state equalization program neither insures that all districts raise the basic program amount nor that all districts tax themselves at the designated required tax. Property-poor districts which tax themselves at less than the suggested rate will not raise the basic program amount even with state equalization aid. At the same time, wealthy districts may raise considerable more than the basic program amount at the tax rates well below the suggested rate. (Pierce, 1975, p.22)

In 1972 the subcommittee on state revenue decided that Oregon's basic revenue problems are twofold. First, Oregon's revenue structure relies heavily on local property tax. Almost 80 percent of Oregon's local jurisdictions have legal authority to use property tax. In

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\*The state equalization support is distributed according to the following formula: Basic Program amount per student X Average Daily Membership Weighted --  $\frac{\text{State Flat Grants} + \text{Federal forest fees and common school fund receipts} + (\text{State computed tax rate} \times \text{district true cash value})}{\text{State equalization support to the school district.}}$

1971 over 72 percent of all general revenue raised by local jurisdictions was supplied by the property tax.

Secondly, the instability and inadequacy of the state's revenue structure to finance public schools equitably creates bases for judicial arguments as to whether or not the system of financing public schools meets the state's constitutional requirements. Article I, section 10 of Oregon's Constitution states that, "No law shall be passed granting to any citizen or class of citizens privileges or immunities which upon the same terms shall not equally belong to all citizens." Also, Article VIII, section 3 of Oregon's Constitution clearly indicates that, "...the legislative assembly shall provide by law for the establishment of a uniform and general system of common schools."

Repeated appearances of court cases, and public uneasiness in general toward the local property tax, have clearly indicated that reforms will take place in financing public education. The dissatisfaction with local property taxation has produced three major policy initiatives in Oregon during the late 1960's and the early 1970's. Two of these policy initiatives dealt with limiting the use of local property taxes to finance public schools. The third policy initiative proposed to construct a state sales tax. Voters rejected all three of these policy initiatives.

Despite the fact that all of the proposals were defeated at the polls, public demand for reform continued. One major response to the public's demand for reform was introduced by Governor Tom McCall in 1973. His reform proposal was a radical attempt to shift the public education revenue formation functions to the state government. Governor McCall's plan sought to eliminate residential property taxation for public schools and to provide equal educational opportunity through state financing of elementary and secondary public education. "The proposal would have changed the percent of state support of public education in grades K-12 from the 23 percent in 1972-1973 to 90 percent in 1973-1974." (Legislative Revenue Office Research Report #24, 1976, p.2)

During the May 1973 election, the voters of Oregon decisively turned down Governor McCall's plan to reform the financing of public education in Oregon. This public rejection of McCall's reform proposal put the decision-makers in an awkward position.

Without additional state revenues the state's reliance on local property taxes for school support would have to continue. And with rising school costs, there would be more budget elections and more defeats. ...The need for reform was still present. (Pierce, et al, 1975, pp.2-3)

To find a solution to these problems, the 1975 legislature searched for feasible alternatives to existing

state public school finance system.\* At that time there were three basic substantive policy alternatives available for the Oregon Legislature to consider: adjustments within the present financing system; increasing the state share of support for public schools; and shifting of the public school finance functions totally to the state. All of these policy alternatives have definite implications concerning public education tax redistribution.

The first policy alternative, developed by the University of Oregon School Finance Project (Pierce, et al, 1975), suggests changes in the level and criteria of equalization grant distributed to individual school districts, which may result in changes in the local property tax rates. This alternative is based on the criterion of local fiscal autonomy. It contains four primary options: (1) Foundation Phase-In; (2) Local Guaranteed Yield; (3) Total Tax Effort Equalization; and (4) Available Wealth Equalization. The second policy alternative involves increasing the level of state share coupled with changes in BSSF distribution formulas. It is based on the two-tier financing criterion. The third policy alternative, total state financing of public schools, has three basic options: (1) income and statewide property taxation; (2) income and statewide nonresidential property taxation; and (3) income taxation only.

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\*A research project was funded in 1973 by the Ford Foundation and directed by the University of Oregon's Educational Policy and Management staff. (Pierce, et al, 1975)

From 1973 until 1977 the Oregon Legislature struggled to enact politically feasible reforms, but without success. During 1977 the Legislature produced an education finance reform in which the state's share in supporting public schools increased from 30 to 40 percent. (Oregon House Bill 5059, 1977) This state share increase was coupled with an increased level of equalization grants, from 20 to 33 percent of total state aid. (Oregon House Bill 3209, 1977) This reform enactment does not become effective until the 1978-1979 school year. An analysis of its impact will not be available until after its complete implementation. It appears that the next Legislature (1979) is likely to consider further increases of the state's share in supporting public schools up to 50 percent, coupled with further adjustments in the BSSF distribution formulas. Furthermore, depending upon the political climate and the magnitude of the taxpayers' revolt, the same Legislature may be forced to introduce reform models based on total state assumption of financing public schools. If the reform is inevitable, and various public education financing alternatives may be considered by the Legislature, the tax burden distribution and resultant implications of public education finance alternatives, from a basic policy research perspective, is open for investigation and analysis.

## CHAPTER II

### THE THEORETICAL BACKGROUND AND RELATED LITERATURE

The socio-economic and political implications of alternative policies to finance publicly-provided goods and services, especially of public education, has been a major area of inquiry for many decades. Much research time and effort has been devoted to determining the causes of inequality in educational opportunity and tax burden distribution. Many alternative public education policies have been constructed to reduce and eliminate them. The primary emphasis of this research is to analyze the tax burden distribution equity aspects of several alternative school finance policies. Accordingly, the equity and incidence criterion of taxation as well as public school finance theories will be explored in this chapter. Furthermore, research and literature related to the area of interest will be comprehensively examined.

#### Taxation

Taxation, as a major element of public policy, is the means by which a government implements policies to reallocate resources from the private to the public sector. Theoretically a general taxation policy should have two broad objectives. First, it should distribute the cost of public sector operations fairly by income classes (vertical equity) and equally among the taxpayers with the same economic circumstances (horizontal equity). Secondly, it should promote economic growth, stability and efficiency.



(Pechman, 1974, p.5) There are two basic components of a tax system: its criterion of equity and its economic effects. Theoretically an ideal tax system will maximize both of these components. However, in reality any attempt to achieve an optimal position in one component may interfere with the achievement of the other.

Each tax consists of two primary components: a base and a rate applied to the base. The most commonly used and revenue-productive tax bases are income (personal, corporate, etc.), property (personal, real estate, etc.) and consumption (sales). The tax rate structure for a given tax base may be regressive, proportional or progressive, relative to certain taxpayer criteria such as income or wealth. The overall burden of a tax is its effective impact on the taxpayers' economic well-being to the extent that it absorbs substantial amounts of income and/or wealth. Progressive taxes are those which require wealthier income groups to contribute relatively greater percentages of their incomes in taxes than the poorer income groups. Conversely, regressive taxes impose relatively larger tax burdens on the poorer income groups than on the wealthier ones.

If progressiveness in taxation is approached as a means to reduce economic inequality, personal income appears superior to either personal property or consumption as a tax base. The taxation of personal income may inhibit the accumulation of economic power, and also

form barriers to the concentration of political power.  
(Bartlett, 1973)

As a revenue producer, the income tax responds to the short-run fluctuations of the economy. Because of its elasticity, the level of income tax revenues may be unpredictable from year to year. It is the suggestion of many economists that the public sector should maintain a variety of tax bases. (Musgrave, 1959 and Eckstein, 1967)

The basis for analyzing the aspects of tax policies has two primary principles: social equity and economic efficiency. (Shoup, 1969, pp.21-44) Both of these criteria are more useful and relevant to understanding taxation policies and financing alternatives than to understanding expenditure policies. The social equity criterion theoretically argues that taxes should be distributed to equalize the sacrificed utility required of all taxpayers. (Musgrave, 1959, pp.99-113) This is regarded as an equitable means of tax burden distribution since people are taxed according to their respective utility of money based on income and/or wealth. This assumption has its foundation in the economic theory of marginal utility as it applies to money: each marginal increase in money income has relatively less value

to the individual than the previous one.\*

Actually, the ability-to-pay principle has two separate parts. It states not only that the rich should pay more, but also that those who are similarly situated (e.g. have the same income) should pay the same taxes. This second idea, that "equals be treated equally," is called horizontal equity while the proper division of the taxburden among people of different ability to pay is called vertical equity. (Eckstein, 1967, p.60)

The interdependency between the vertical and horizontal equity concepts in taxation has been explained by Musgrave. Without an attempt at vertical equity in taxation, the horizontal equity becomes a preventive system against discrimination. Within this perspective, "...the principle of horizontal equity must be seen against the backdrop of an explicit view of vertical equity." (Musgrave, 1959, p.160)

Literature and studies on taxation basically focus on two general principles used in determining tax burdens: the "benefits received" and the "ability-to-pay." (Musgrave, 1959) The "benefits received" principle states that taxes should be levied upon individuals who gain from the provision of a public good or service in proportion to their net gain. This method of taxation may be regarded as an efficient way to determine tax burdens

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\*However, there are two major problems to the equal sacrifice criterion based on the marginal utility concept. It must be based on an objective index of ability-to-pay that can be measured, and it must be based on assumptions regarding the slope of the income utility curve so that individual sacrifice can be calculated. (Musgrave, 1959, p.94)

since it is based on simultaneous determination of both expenditures and taxes. The problem with this principle of tax burden distribution is that its application may be unfeasible because it may not be possible to identify the level of specific public activity benefits that are accrued to individuals. Also, on many occasions it may not be possible to identify the beneficiaries of public activities. Many public goods and services, such as public safety and education, may provide individuals with different degrees of benefits either immediate or long-term based. Primarily because of the aforementioned reasons, the "benefits received" principle may be used only under circumstances where benefits accrued from public activities could be calculated.

In the "ability-to-pay" approach, the payments for the public goods and services are treated as a separate phenomenon from the benefits received. Taxes are treated as compulsory payments. On the other hand, the expenditure criterion is seen as a planning phenomenon not responsive to the functionings of the market.

The view that taxes must be imposed in accordance with some socially acceptable rules implies a planning view of the public household. The ability-to-pay idea, moreover, points beyond progressive taxation for the financing of public services towards the more general problem of income redistribution.  
(Musgrave, 1959, p.92)

To determine the equity of a certain tax, it is necessary to determine where the burden of the tax fall.

The burden of a tax often does not fall on the entity upon which it is levied as it can be shifted to another entity. Consequently, the end results of any attempt to determine the distribution of tax burdens will vary according to the set of tax shifting assumptions used in calculating the final incidence. (Seligman, 1959, pp.212-213 and Mieszkowski, 1967, p.260) Such results of tax burden distribution may also vary depending on whether partial tax incidence (particular tax or taxes) or total tax incidence approach has been employed.

In dealing with tax burden distribution issues, one's conclusions will depend on whether one is concerned with specific tax incidence (the change in incidence that would happen when a certain tax is added or dropped) or concerned with the differential tax incidence (the change in distribution of incidence that would happen when a certain tax is substituted for another).

All ramifications of a tax levy can be traced only when recognition is given to every adjustment that is elicited in response to a tax. When certain assumptions are made, e.g. concerning market structure, and everything else is held under ceteris paribus, the incidence of a tax can be determined. (Phares, 1973, p.7)

### The Incidence of Property Tax

Two basic schools of thought deal with incidence aspects of the property tax: the traditional and the pure market approaches. The differences between the two approaches are based first on different income concepts and, secondly, on different tax incidence-tax shift assumptions. "The different sources of property-tax revenue complicate the issue of incidence because for each source, different assumptions must be made about whether the tax is shifted forward to consumers or backward to other factors of production or is borne by the payers of the tax." (Ladd, 1974, p.46)

The traditional approach was based on the agreement depicting the property tax as regressive relative to level of income. Followers of the traditional approach assume that tax on land is not shifted, and tax on structures and improvements is paid by the owner if it is owner-occupied or shifted to the tenant if it is renter-occupied. It is also assumed that the tax on commercial and industrial goods and services is shifted to the consumer.

Many studies conducted within the past two decades used the traditional approach. The most comprehensive research efforts were those of Netzer (1966) using 1957 data, Musgrave (1973) using 1968 data, ACIR (1973) using 1970 data, and Pechman and Okner (1974) using 1966 data. In varying degrees and strengths, all four of these studies agreed on the regressivity of the property tax with respect

to the level of income. However, Dick Netzer shifted his position toward the pure market approach by stating that, in general, the property tax may be progressive. (Netzer, 1973, pp.32-35)

These traditional approach studies have generally concluded that owners of property and the means of production can shift the burden to the consumer of the goods and services which are produced by the taxed property. (Aaron, 1975, p.38) Modifying this conclusion marginally, studies by Muth (1962) and Reid (1962) argued that the property tax is basically a tax on land and capital. Within that perspective, this modified traditional approach indicates that, "...the tax on commercial and industrial property should be distributed in line with income from capital rather than on the basis of consumption expenditures; whereas taxes on residential structures should be distributed in line with housing expenditures." (Ladd, 1974, p.49) The major finding of the modified traditional approach studies is that overall property tax burden is regressive for low income groups and progressive as income increases.

The pure market approach accepts the premise that the owners of the property and the means of production pay the property tax. This approach is best exemplified in studies by Gaffney (1972), Mieszkowski (1967 and 1972), Ladd (1974) and Aaron (1975). Mason Gaffney's study,

"The Property Tax Is a Progressive Tax," has brought to the public's attention the pure market perspective, which was developed by earlier Mieszkowski studies. Helen Ladd constructed a well-developed and highly comprehensive study of the property tax from both traditional and pure market theoretical perspectives. Ladd's study also investigated the public policy implications of the property tax impacts on the state and local financing of public goods and services. The most comprehensive and detailed research of the pure market approach was published by Henry Aaron in 1975. In his study Aaron employed three primary analytical procedures to support basic assumptions of pure market approach.

The first considers the distribution of burdens from a "property" tax imposed uniformly on all property—land and capital goods alike. The second considers the redistribution of burdens arising from deviations in tax rates around the average by location and industry. The third considers the impact on the aggregate supply by land and capital of changes in after-tax rents and profits. (Aaron, 1975, p.38)

Through these analytical procedures Aaron attempts to prove the basic premise of the pure market approach theorists, primarily Mieszkowski. As accepted by the author himself, the primary limitation of this research is the pure market assumption whereby all property owners in their profit maximization efforts are free from all external constraints. (Aaron, 1975, p.53) It appears that under the conditions of market imperfections or controlled



market situations, the traditional model or the modified traditional model may become more relevant to the investigation of the incidence aspects of the property tax.

Ladd (1974) aptly expressed that as long as the property tax applied uniformly to all land and capital and, "...as long as the assumption of perfect markets approximates the real world, the burden of the property tax is essentially progressive." (Ladd, 1974, p.53) Under certain circumstances, relative to their theoretical paradigms, both the traditional and the pure market approach may empirically prove their points, leaving the policy makers in confusion.

One clear example of this situation is the dispute between the two schools of thought over the elasticity of expenditure for housing with respect to permanent income (a statistical technique used in measuring the relative regressivity-progressivity continuum). According to the studies by deLeeuw (1971) and Aaron (1972), housing expenditures are approximately proportional to permanent income (an expenditure elasticity of 1.0). On the other hand, a study by Carliner (1973) concluded that housing expenditures, relative to permanent income, are slightly regressive for the owners (an expenditure elasticity of 0.7) and strongly regressive for the renters (an expenditure elasticity of 0.5). (Pechman, 1974, pp.32-33)

One may find the property tax from the deLeeuw-Aaron perspective to be a proportional tax relative to permanent income, while another person may find it to be a highly regressive tax if he or she employs Carliner's approach. This situation is clearly indicative of the usage of different sets of theoretical assumptions to construct the relevant methodologies. Moreover, such disputes illustrate that the theory of tax incidence may be in its early stages of development.

#### The Tax Burden Distribution

Several research projects concerning the distributive impact of taxation were conducted during the 1930's primarily by Yapple, 1936 and Newcomer, 1937. Maxine Yapple's research (1936) dealt with the general burden of direct taxation. In her study the analysis was based on the assumption that the tax burden impact and the tax incidence were the same. This assumption of not recognizing the tax incidence theory limited the scope of her research.

In 1937 Mabel Newcomer studied the impact of tax burden distribution on twenty hypothetical families in the states of New York and Illinois with various socioeconomic backgrounds. Because of its limited perspective, the conclusions of this study were amenable only to a broad definition of tax burden distribution at the national level. "While this study coped with numerous theoretical

problems, relevant to shifting and incidence, provided estimates using alternative assumptions, and utilized the most refined data available (on income, consumption patterns, taxes, etc.) the results were extremely vulnerable due to its limited scope." (Phares, 1973, p.8)

Following Yaple and Newcomer's studies, Helen Tarasov, in 1942, published her research document, "Who Does Pay the Taxes?" This study examined the overall tax burden distribution by constructing a model that analyzed the relationship between the tax shifting-tax incidence theory and the data on aggregate income and consumption patterns. The primary contribution of Tarasov's study is the methodological procedures used in refining the tax allocation techniques and aggregate income data. Compared to the Yaple and Newcomer studies, Tarasov's research exemplified a considerable advancement in scope and methodology.

One of the most comprehensive and thorough tax burden distribution investigations was undertaken by Musgrave and associates in 1948. (Musgrave, 1951) The study, "Distribution of Tax Payments by Income Groups: A Case Study for 1948" provided a basic paradigm and conceptual frame of reference for much future research. Within Musgrave's study effective tax estimates were considered for all levels of government. The study concluded that, "...the overall tax structure is by no means as progressive as is generally surmised." (Musgrave, 1951, p.28) According to the results of this research, state and local

taxes as a whole were considerably regressive throughout the tax system, and federal taxes were slightly progressive in general. The study concluded that the entire tax system is highly regressive at the low income level, proportionate at the middle income level, and relatively progressive at the high income level.

In reanalyzing Musgrave's data, Rufus Tucker added to his analysis certain income components which were non-monetary and imputed. (Tucker, 1952) Tucker's adjustments did not significantly alter the findings of Musgrave's study. However, his contribution to forming a conceptual basis for calculating income was greatly used and developed by later studies, especially by George Bishop.\*

There are several tax burden distribution studies dealing specifically with state and local systems. Differing from the aggregate public sector taxation analyses, these studies are concentrated at the state and local levels and deal particularly with the structure of the revenue system and its politico-economic implications.

There are three major works of research that have explicitly concentrated on the tax burden distribution aspects of the state and local revenue system. The first of these studies was conducted by Musgrave and Daicoff in 1958 for the State of Michigan. (Musgrave, 1958)

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\*Bishop examined the subject matter in detail in his study, "Income Redistribution in the Framework of the National Income Accounts." (Bishop, 1966)

The uniqueness of this research is that it was a pioneer attempt to study the combined tax and expenditure incidence within a particular state. (Phares, 1973, p.14 and Pechman, 1974, p.16)

The following year Harold Groves directed a similar research project for the State of Wisconsin. (Groves, 1959) The major difference between the two studies was the concept of open versus closed economy. While the Michigan study assumed the state to be an open economic system, the Wisconsin study accepted the opposite, a relatively closed economic system relating only to the surrounding states. The most important contribution of the Wisconsin study is its usage of the concepts of exportation and importation of taxes.

A third study was completed for the State of Minnesota by O.H. Brownlee in 1960. (Brownlee, 1960) This study investigated the tax burden and expenditure-benefit disparities inherent to the state's public sector. The major weakness of this study was its light treatment of tax importation and exportation phenomenon.

The most recent and comprehensive studies in the area of tax burden distribution were done by Phares, State-Local Tax Equity, 1973 and Pechman, Who Bears the Tax Burden?, 1974. The Pechman and Okner research was concerned with only the tax burden distribution aspects of public sector operations. Their primary limitation was

that the study did not consider the impacts of the distribution of benefits from public sector investments that are supported by taxes. Their major purpose was to compare the relative tax burden of several population subgroups as well as the traditional income subgroups. Their primary conclusion was that very little income redistribution is accomplished by the present level of taxation.

The Phares study examined the level and distribution of tax burdens of public goods for each of the fifty states. This research realized its purpose by structuring a model to estimate the claims of governments over private resources. Within the limitations and assumptions of his model, Phares estimated effective tax rates for each type of tax and computed for each tax the degree of rate variations across states.

When the mean (level of tax burden) and coefficient of variation (across systems) for each tax by income class are computed for those states actually using the tax, it is found that there are substantial differences across systems in both the level and variation of burden for specific taxes and comparatively across various types of taxation. (Phares, 1973, p.3)

Phares' study (1973) is a pioneer research in its attempt to examine in detail the state and local tax incidence-tax burden. He employed statistical techniques (factor analysis and Gini Ratio of Concentration) that had not been previously applied to tax incidence-tax burden analysis. The major findings of this study are three-fold. First, the incidence of specific taxes varies

considerably among states. Secondly, specific state-local taxes appear regressive. However, this does not necessarily hold true for systems of taxes.

The regression analysis reveals eleven incidence patterns that are proportional rather than regressive. Closer examination shows these to be states with individual income taxes of sufficient relative importance to exert a significant progressive-proportional impact. (Phares, 1973, p.90)

Thirdly, Phares' study indicates that the most regressive influence on state-local systems is an outcome of local sector policy. When the regressivity of the local sector is excluded, "...it is found that many systems are actually progressive or proportional, except for the effect of the local property tax." (Phares, 1973, p.91)

#### Theoretical Basis of Public School Finance\*

The development of a theoretical basis for analyzing public school finance can be traced to the beginning of this century. The theoretical paradigm that has developed since then has had considerable influence on public education financing policy formation. For example, several important questions that were analyzed by school finance theorists were: what is the extent of control the state governments should have over local school districts? Is the property tax the main cause of inequities in tax burden distribution? What is the most appropriate govern-

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\*This section is based on Roe L. Johns, Full State, 1972 and "Some Critical," 1973.

mental level to finance public education?

Within the basic school finance theory, the criterion of state support to local school districts was initially developed by Ellwood F. Cubberly. He constructed the basic criterion of state aid distribution based on the minimum foundation level and local tax effort. As expressed by Cubberly (1905):

...the duty of the state is to secure for all as high a minimum of good instruction as is possible, but not to reduce all to this minimum; to equalize the advantages to all as nearly as can be done with the resources at hand; to place a premium on those local efforts which will enable communities to rise above the legal minimum as far as possible; and to encourage communities to extend their educational energies to new and desirable undertakings. (Cubberly, 1905,p.17)

Even though Cubberly's tax effort criterion may not be acceptable to some contemporary school finance analysts, he was a leader in constructing many current concepts in school financing. The following findings and suggestions exemplify this: (1) as the result of unequal wealth distribution, the educational standards set by the states may cause inequities in tax burden distributions; (2) the states should equalize the resultant excessive tax burden on communities; (3) a statewide tax for financing public schools is the most appropriate tool to equalize excessive tax burdens; (4) without a fair state aid distribution system, any type of statewide taxes for financing public schools will not accomplish its objectives. (Johns, Full State, 1973, p.17)



Another important school finance theorist, Harlan Updegraff, refined the local tax effort criterion initiated by Cubberly. Updegraff (1922) concluded that state aid to public education should be distributed inversely according to school districts' property cash value and directly according to school districts' tax effort in proportion to its taxpaying ability. This approach to state support, "power equalizing,"\* was updated and refined by Coons, et al, in 1970.

Supporting the state support concepts of Cubberly and Updegraff, but disagreeing with their local tax effort criterion, George D. Strayer and Robert Haig, in their 1923 study, indicated that state aid distribution based on the local tax effort is contradictory to the principles of equal educational opportunity.

The state should insure equal educational facilities to every child within its borders at a uniform effort throughout the state in terms of the burden of taxation; the tax burden of education should throughout the state be uniform in relation to taxpaying ability, and the provision for schools should be uniform in relation to the educable population desiring education. (Strayer, 1923, p.173)

Strayer and Haig's school finance concept was further developed by Paul Mort in his study Measurement of Educational Need. (1924) Theoretically he refined and advanced the Strayer-Haig concept by developing a criterion upon which the state basic foundation program could decide

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\*See Appendix A for the definition of "District Power Equalization."

what should and should not be included. For example, he suggested that circumstantial expenditures which result from causes over which school district communities have no control should be included in the foundation. (Mort, 1924, p.6) One of Mort's major contributions to school finance theory was the standard measure of educational need based on "weighted pupil" values. This "weighted pupil" criterion became the framework for the future research on unit-cost differentials.

A rather important, but not well-accepted, contribution to school finance theory was made by Henry C. Morrison during the 1930's. His criticisms of the school finance theories and practices of his day are often applicable to the school finance problems of today. From a legislative perspective, he indicated that public education is a state responsibility. Morrison believed that the policy suggestions by the previous theorists will continually fail to equalize educational opportunity and to provide equity in tax burden distribution. He suggested that the state take over the administering and financing of public schools. Morrison concluded that the most efficient and equitable method to finance public education would be through a statewide income tax. (Morrison, 1930) Morrison's reform suggestions at that time were radical in a political environment wherein decentralization and home-rule issues were strongly followed. It appears that policy suggestions by theorists who stayed in the political

mainstream of local self-development (Updegraff, Strayer, Haig and Mort) were highly acclaimed. (Johns, Full State, 1973, pp.28-30) Nevertheless, Morrison's contributions were reintroduced by Conant in 1968 and further developed and refined by Johns in the early 1970's.

#### Litigation and School Finance Research

The belief that two equally-circumstanced taxpayers should not be required to shoulder unequal tax burdens for equal levels of public education services was one of the primary rationales behind the 1971 Serrano judicial decision in California. Research in this area has been continuing for several decades.

During the 1930's Henry C. Morrison, in his study School Revenue, expressed concern over the expenditure level inequalities inherent to the operations of public school districts in the State of Illinois. (Morrison, 1930) However, it was not until the 1960's that the issues of inequality in public education and its financing were investigated in detail. In 1961 James H. Thomas, et al, published a research project entitled "School Revenue Systems in Five States" for Stanford University. (Thomas, 1961) The primary focus of this research was exploration and confirmation of the existing inequalities in public education expenditures, tax effort levels and fiscal capacities among school districts. A prime example of studies in that aspect was conducted by Sexton (1961)

in the Detroit public school system. She concluded that:

A typical upper income child, then, goes to a school that is safer, more suitable and adequate for his needs, more attractive inside and out, with much better facilities in most subjects, including science, music, art and library, and also with better lighting, lavatory and other facilities than the school attended by the average lower income child. (Sexton, 1961, p.134)

Within the next few years studies by McLure (1962 and 1964) and by Benson (1963 and 1965) widely contributed to the conceptualization of the inequity problem inherent to public education. The greatest impact in this area was created by the Coleman study which made the concept "equal educational opportunity" a publicly well-known criterion. Several references in the Coleman Report were made to the weakness of the relationship between the level of school expenditures and student achievement scores. (Coleman, et al, 1966) This influenced some to conclude that variations in the level of public school expenditures have little or no bearing on educational opportunity or educational output. (Bowles and Levin, 1967 and Coleman, 1968) Within a few years educational opportunity aspects of the Coleman Report (1966) were restudied and researched by many scholars from school finance perspectives.

Research, especially by Wise (1968), Weiss (1970) and Coons (1969 and 1970) exposed the judicial aspects of the concept "equal educational opportunity." In general these studies revealed that the school districts within each state vary widely in per pupil property cash values.

in Weiss' (1970) study evaluating 1,384 school districts in six states, he concluded that the evidence obtained supported the contention that the property wealth of the school districts was the most important factor influencing the level of expenditures for education. And an earlier study by James, et al, (1966) reached a similar conclusion that the level of educational expenditures was directly related to per pupil property wealth and median family income of the school districts.

While the Serrano case was being tried in the California courts in 1971, several studies proposed a variety of alternative plans to solve the existing inequities in public school finance. These have generally been based on two research approaches: state aid distribution studies and full state assumption studies. The research that has concentrated on the criterion of state aid distribution formulated two basic strategies: foundation (using the Strayer-Haig formula) and power equalization.\* Research projects conducted by Benson (1964), Johns and Alexander (1971), Callahan (1972) and Levin-Muller-Scanlon (1972) studied the policy implications of these different state aid formulas. Coons, et al, (1971) also greatly contributed to the construction of district power equalization formulas to redistribute the excess funds from rich property tax base to poor property tax base school districts.

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\*See Appendix A for the definition of these state aid distribution strategies.

(Coons, 1970, pp.200-243) They concluded that, "...the more important consideration is the manipulation of the formula rather than the general type of formula that has been adopted." (Hickrod, 1972, p.87)

A plan for complete state financing of public education which retains local school district level policy-making and administrative control was advocated by James B. Conant at the 1968 meetings of the Educational Commission of the States. He argued that public education in the states would be greatly improved if educational decisions at the local level could be completely divorced from considerations of financing. His proposal was considered radical, primarily because of his suggestion to eliminate totally the local taxation of public schools. Conant recommended full state financing through broad-based taxes rather than the local property tax. (Allen, 1968, p.56)

A number of studies have analyzed this relatively radical alternative, the full state assumption of public education finance. (Benson, 1971, Johns, 1973, Campbell, 1972, Rossmiller, 1973 and Berke, 1974) These studies in general have indicated that there is a strong rationale to support full state funding of education as a possible solution to the existing inequalities in educational opportunity, and the inequities inherent in the existing allocation of costs of public education.

In analyzing the implications of different financing models, Johns and Alexander studied the alternative methods to distribute the state funds under increased and full state assumption models of public school financing. They emphasized that under full state assumption, distributing funds on the basis of block grants per student weighted on the basis of cost differentials would equalize the educational opportunity. (Johns and Alexander, 1971, pp.176-280) Conclusively, they stated that, under centralized school financing systems, "...it is essential that central governments provide for necessary variations among school districts in unit costs or they will dis-equalize the educational opportunities they are attempting to equalize." (Johns and Alexander, 1971, p.80) This criteria was also emphasized in the report prepared by the Fleischmann Commission (1972) which supported the full state funding of public education in the State of New York. The Commission suggested that the state impose a uniform statewide property tax. The Commission proposed that a property tax refund system be established to reduce the effects of increased taxation on poor families residing in property-rich school districts. While many previous studies have suggested local supplementation under centralized financing in order to accomodate the concept of local control, the Fleischmann Commission opposed this concept because it would recreate fiscal

disparities between school districts.

The controversial issue of state assumption versus local control was heavily debated between Charles Benson and Harvey Brazier at the National Tax Association Conference in 1971. In 1972 Campbell responded to this controversy by splitting the issues, "...it is quite possible to have financing at one level and policy making and other kinds of control at another." (Campbell, 1972, p.136) Levin, Muller and Scanlon (1972) studied this idea in their analysis of the administrative structure of public education in the State of Hawaii, the only state fully financing its public schools. This report supported the conclusion that administrative decentralization is possible under a centralized financing system. (Levin, Muller and Scanlon, 1972, p.236)

#### Taxation for Public Schools

Several studies within the last two decades have evidenced the existence of wide variations in fiscal capacity and tax effort among school districts. (Rossmiller, 1971, ACIR, 1971 and Briley, 1971) These studies have indicated that tax burdens in financing education are not being shared equitably. The Rossmiller study (1971) clearly presented that, in most of the states, the objective of financial equalization of educational opportunity is far from being attained. Evidence presented in that study indicates that, "...local revenue is



disequalizing and that basic state revenue is generally equalizing in effect. Categorical state revenue is generally neutral or disequalizing in effect." (Rossmiller, 1971, p.115) This was confirmed in a study conducted by Betsy Levin (1972). Studying several states, including Oregon, she reached several conclusions including the following:

- (1) urban center school districts appear to have relatively higher per pupil property cash values and lower per capita income when compared to suburban and rural school districts;
- (2) urban school districts appear to have relatively lower property tax rates for public school and higher total property tax rates for all services (municipal overburden);
- (3) tax burdens to finance public education by income groups vary sharply among states. However, in general, combined tax structure (state and local) is regressive. (Levin, 1972, pp.203-204)

This important research effort by Levin was followed by studies conducted by Johns and Burns (1971) and Sacks (1972) The Johns and Burns study was based on 445 school districts in ten selected states. The school districts in this study were classified into four groups--urban, central, suburban, independent city and rural. They concluded that there is no clear evidence to support the contention of systematic discrimination against urban districts in the distribution of state funds. (Johns and Burns, 1971, p.206)

However, the results of the Sacks, et al, (1972) study contrasted with Johns and Burns' research. In their study Sacks, et al, attempted to analyze the basic reasons

behind the urban-suburban locational fiscal conflict. Sacks concluded that urban public education finance has not been integrated into the domain of public education finance in general.

The financial problems emerge instead from the complex interrelationships and deteriorating position of the large cities relative to their own suburbs and states, and from the standpoint of school finance, these changes in the position of large city school systems have not been recognized and incorporated into effective policy. In addition to the usual difficulties associated with changes in policy, the basic analytical perspective of school finances continues to be phrased in terms of rural and suburban problems to the detriment of the cities. (Sacks, 1971, p.167)

The phenomenon of urban-rural public education fiscal disparity has been studied by Grubb (1971) and Muller (1973) from the income redistribution perspective. Grubb (1971) in his study entitled "The Distribution of Costs and Benefits in an Urban Public School System," analyzed the income redistribution aspects of public school financing in Boston, Massachusetts. He reported that public education benefits children from higher-income families more than lower-income families. Grubb clearly states that, "...insofar as poverty is a racial problem, public education seems to exacerbate rather than improve the existing situation." (Grubb, 1971, p.11) Muller, in his study (1973) estimated the impact on income redistribution of state aid to school districts in the State of Delaware. Like Oregon Delaware raises most of its revenue from a relatively progressive personal income

tax. Also, similar to Oregon, the existence of a single major urban area in Delaware, which comprises 53 percent of the population and contributes over 90 percent of public education funds, results in a redistribution of income from the more affluent to relatively poorer school districts. Muller's study indicated that considerable income redistribution occurs in Delaware resulting from the system of state aid distribution. He indicated that increasing the level of state support with a distributive system based on the size of the property tax base will provide more aid to relatively wealthier districts. The basic reason for this, as Muller noted, may be attributed to the lack of positive correlation between income and property value in Delaware. In constructing a third criterion, "educational need," Muller concluded that:

The application of alternative state distribution grant criteria in Delaware indicated that relative fiscal need criteria in the central city measured by either property value or income did not even approach the level of educational need indicated by the use of socio-economic characteristics of achievement scores. ...The use of educational need criteria to allocate state funds could therefore result in considerable income redistribution from suburban districts to central cities, and to a lesser degree, to rural areas. (Muller, 1973, p.245)

Dealing specifically with the distribution of tax burdens in financing public education, Hartman and Reischauer (1974) concluded that public education finance reform may bring increased public education tax collections and also may shift the distribution of tax burdens among

school districts and taxpayers. In their research, using nationwide and the New York State data, they analyzed the effects of two principal reform plans: "District Power Equalizing" and "Full State Assumption." Their study indicated that a variety of revenue sources with different tax burden distribution implications are available for state governments to expand the level of support for public education. In dealing with the effects of statewide taxes on districts and families, they concluded that certain changes in tax policies may completely relieve some groups from the responsibility of supporting public education. In dealing with the incidence of such taxes on individual taxpayers they concluded that, "...low income homeowners living in high property tax districts stand to gain under any shift in tax sources, while high income homeowners residing in tax havens would pay more under a shift to state revenue sources." (Hartman and Reischauer, 1974, p.143)

Several extensive studies dealing with the composition of local and possible statewide property taxation have been conducted by Ladd (1975, 1976), Thorson (1974) and Schoepflein (1974). Ladd (1975) examined the education expenditure implications of the composition of the local property tax base in the Boston metropolitan area. Her study showed that commercial property has a greater effect on the level of public education expenditures than

industrial property. Using a public education expenditure model, this study concluded that property cash value per student compares unfavorably from a state aid distribution perspective.

If (property cash value per student) is the basis for state or federal aid to local communities, the purpose of which is to reduce disparities in education service levels caused by differing abilities to finance such services, then, as has been shown, the distortions caused by (property cash value per student) work to the disadvantage of low income communities. (Ladd, 1975, p.158)

In a later article, analyzing the same data, Ladd (1976) indicated that changing to statewide property taxation for public education purposes will have definite effects on expenditure levels, revenue flows and tax burden distribution, depending upon the character of the state aid distribution formula employed. She concluded that in the Boston SMSA, shifting from local to statewide taxation of commercial and industrial property would have adverse distributional effects and be undesirable on equity grounds. (Ladd, 1976, p.151)

Shifting the financing of public education to non-property based revenue sources was studied by Raymond. (1974) Based on New York State data, he concluded that total state assumption with non-property based taxation might be accomplished without punitively taxing any one group of taxpayers within the state. (Raymond, 1974, p.119) However, this finding was disputed by Grieson

(1974) who indicated that any shift, such as from local to statewide property taxation or from local property to statewide non-property taxes, would have drastic effects on the distribution of costs of public education.

In dealing with local impacts of public school financing alternatives, Oakland (1974) studied the Baltimore, Maryland SMSA, and Waldauer (1974) investigated comparative county-level impacts of alternative financing models in three states (Washington, New York and New Jersey). The former study indicated that in Baltimore City tax burdens were significantly higher than in the surrounding suburban communities. Oakland stated that the existing system of state aid distribution in Maryland achieves a modest redistribution of resources to relatively less wealthy areas of the state. He concluded that most of the redistribution stems from the source of revenues used (state income tax) rather than the state aid distributive system. He emphasized that the state aid distribution system has an insignificant impact on the level of education spending. In analyzing several state aid distribution reform proposals, Oakland expressed that,

By redistributing present state aid according to a foundation formula based on present state aid levels, the redistributive properties of state aid would be improved, locational neutrality enhanced, and disparities in spending levels narrowed; however, the reform does not completely or even substantially negate fiscal disparities between Baltimore City and its suburbs. (Oakland, 1972, p.244)

The major conclusions of the Waldauer (1974) study show certain similarities to the Oakland (1974) study's findings, especially concerning redistributive criteria. Waldauer stated that, "...greater equalization among the counties takes place when the flat grant is adjusted by deducting a uniform local share of education costs based on local fiscal capacity." (Waldauer, 1974, p.228) However, he indicated that such redistributive criteria based on property cash value would cause urban areas to lose state aid. His major conclusion was that personal income, rather than the taxable property, would be relatively more beneficial to urban than suburban areas.

#### Public Education Finance--Oregon

Within the last decade there have been several major studies investigating the cost-benefit allocative criterion of public school financing in the State of Oregon. Rose (1966) analyzed the rank order correlation between property cash value per student and tax relief funds (ORS 615) per student among Oregon counties. In 1965 the Oregon Legislature enacted ORS 615 authorizing distribution of surplus state general fund revenues to the counties with a requirement that such funds be used to reduce the property tax rate. Rose (1966) concluded that the distribution of tax relief funds highly correlated with property wealth per student, which showed that counties with relatively greater fiscal ability and relatively less

educational need would receive larger portions of tax relief funds to reduce their rates. (Rose, 1966, p.7)

Research of the components of the property tax base in school districts of Oregon was also conducted by Rose in 1967. He sought to analyze the impacts of using the property tax base valuation as the measure of fiscal ability. Rose (1967) concluded that state equalization aid does equalize the disparities in tax rates among school districts. Rose's research, however, showed that the equalization of tax rates does not necessarily connote equalization of educational cost-benefit allocations. As indicated by several aforementioned studies, state aid distribution criteria based on property valuation per student may actually cause further cost-benefit distribution inequities by reallocating resources from relatively income-poor to relatively income-rich school districts.

Two substantial contributions to public school financing during the 1960's were made by Frank Farner. In his earlier study Farner (1966) analyzed Oregon's school districts' socio-economic and demographic characteristics and their relationships to the school district financing practices. He concluded that the relationship between the socio-economic variables and district financial variables is highly insignificant except for housing and income-related variables. (Farner, 1966, p.69) In his later study Farner (1969) approached the school finance



problems from a broader perspective. He studied the relationships of county tax bases financing public education in 11 western states, including Oregon. To describe and analyze the socio-economic and demographic characteristics among counties with identifiable property tax base relationships, he concluded that, "...the tax-paying ability of a county as measured by property per pupil is not usefully related to that county's tax-paying ability as measured by income per pupil or sales per pupil." (Farner, 1969, p.56)

A similar conclusion was reached in a study by Paus (1970) when he analyzed the problems of tax equity in financing public schools in relation to the income and property base of counties in Oregon. Paus' research (1970) indicated that relatively higher income-base counties received relatively more state aid per pupil. (Paus, 1970, p.199) Paus also reached the conclusion, concerning the tax burden distribution aspects of school financing in Oregon, that a highly regressive tax pattern between the percentage of income collected for school support and the per pupil income was apparent.

Total collections, composed of both state taxes and local property taxes, were regressive in relation to the income base among thirty-six counties. The percentage of reported income collected for public school funding was higher among counties exhibiting lower income bases. (Paus, 1970, p. 198)

Several studies approach Oregon public education

financing measures from a primarily political perspective. (Lucier, 1971, Miner, 1971, Saalfeld, 1972, Pierce, 1973) The study by Lucier (1971) was based on the 1969 tax substitution referendum submitted to the voters of Oregon. This referendum prescribed a sales tax to raise funds to be used in providing property tax relief. Lucier, using a rational utility choice model, accurately predicted the outcome of the referendum. His findings were in agreement with the assumption that individuals maximize their self-interest through political choice. Lucier reported that minimizing the direct burden of taxation enabled the voter to maximize his income. (Lucier, 1971, p. 90)

In addition to Lucier's findings, Saalfeld (1972) in his study Taxpayers and Voters: Collective Choice in Public Education, reached similar conclusions. In analyzing taxpayer-voter behavior in school district budget elections in Oregon, Saalfeld stated that the higher the cost of education, the higher the probability that it will exceed the preference function of the median voter. He indicated that this situation would result in an overall voter rejection of the school budgets. Saalfeld concluded that, "...both the percent voting no and the success and failure rate were found to be most strongly related to the magnitude of the proposed tax rate." (Saalfeld, 1972, p.139)

Jerry Miner (1971), in responding to the results of the 1968 property tax limitation referendum (Proposal Seven), analyzed in depth the primary reasons of its overwhelming rejection by the voters. He stated that the property tax was supported by every organized social entity except by the individual property-oriented enterprises. He concluded that Proposal Seven's attempt to impose a constitutional property tax limitation failed and would probably curtail future efforts to amend the Oregon Constitution. (Miner, 1971, pp.183-184) In his analysis Miner recognized that the percentage of votes cast in favor of Proposal Seven increased with the property tax rates in a linear fashion.

Increases in "Yes" votes with increasing tax rates would represent decline in collective acceptance of higher property tax rates, following whatever individual evaluations may be made of the services supported thereby. On the other hand, decreases in "Yes" votes cast with increasing tax rates would indicate, not increasing satisfaction with increasing taxes per se, but increased acceptance of the local governmental services supported by those taxes. (Miner, 1971, p.201)

In response to the defeat of the 1973 referendum over a public school finance system of near total state assumption (The McCall Plan) Pierce (1973) investigated the basic equity aspects of the McCall Plan and analyzed the political rationale for its defeat. He reached the following conclusions in explaining the reasons behind the public rejection of the McCall Plan:

(1) (A lack of consensus among the political leaders) led to failure in the Oregon Senate and contributed to the defeat of the plan at the polls.

(2) (It appears that) the defeat of the McCall Plan raises doubts about the efficacy of tying tax reform to changes in the structure of public services.

(3) (It also appears) that the McCall Plan runs counter to the tendency of state and local governments to select new taxes that are painless rather than those that are fair. (Pierce, 1973, pp.130-131)

As a result of the 1973 referendum rejecting the McCall Plan, the Oregon Legislature formed a Committee on Equal Educational Opportunity to study and formulate policy suggestions for the subsequent legislative session. This committee established a research staff under the guidance of Lawrence C. Pierce of the University of Oregon to analyze the present public school finance system and to construct feasible financing alternatives to be considered by the Legislature. The final product of the study, State School Finance Alternatives, presented technical information to assist the Legislature in its consideration of the proposals presented by the Committee on Equal Educational Opportunity. (Pierce, 1975, p.4)

## CHAPTER III

### THE METHODOLOGY

There is a great deal of disagreement concerning the basic issues of public school finance. One reason for the disagreement is that the purpose and essence of the partnership between the state and the local school districts is not clearly defined. Consequently the decision-makers are faced with identifying the "problem" within a highly unstable and ill-defined political environment. To some decision-makers the problem is one of state government's avoidance of responsibility in funding public schools by relying on local financing. To others the problem is the dependence upon local property taxes in financing public schools. Some decision-makers may feel that the problem is created by the use of local voting systems to determine the school financing levels. Other decision-makers believe that the basic problem in financing public schools at the local community level is created by disparities in taxable property wealth among the local school districts. (Andersen, 1977, p.1)

It is very difficult and troublesome to analyze the differently defined and interpreted school finance problems, especially when a comprehensive methodology for the study of public education policy impacts has not yet fully developed. (Coleman, 1971, Cresswell, 1974, p.42)

Application of social science knowledge and methodology in policy analysis would improve the information avail-

able to decision-makers from a well-planned policy development procedure.

The production of objective evidence is seen as a way to reduce the politicking, the self-servicing maneuvers, and the log-rolling that commonly attend decision making at every level from the Congress to the local school. Data will replace favors and other political negotiations, so that the most rational decisions will be reached. (Weiss, 1972, p.3)

### Policy Research

The conceptual framework of this study is based on analytical methods employed by policy analysis procedures. The focus of this research is on the tax burden distribution impacts of public school finance reform alternatives. This study is "decision-oriented" as opposed to "conclusion-oriented." "The latter is intended to contribute to knowledge and theory building in some area. Decision-oriented research is intended to be a guide to action." (Cresswell, 1974, p.42) Therefore, policy research becomes a methodological approach to increase the rationality of making and selecting policies to accomplish certain social objectives. Anthony Cresswell states that the primary objective of policy research is threefold: first, the policy research is designed to transform the socially defined goals into workable policy variables; secondly, it is structured to discover to what degree current policies are successful in achieving their objectives; thirdly, the policy research is formed to determine how to adjust the policy alternatives to achieve

the objectives more successfully. (Cresswell, 1974, p.42)

As suggested by many policy scientists, a rational policy procedure should be based on empirical evaluation of policy alternatives designed to achieve a set of objectives. (Dror, 1968, Dye, 1975 and Baker, 1975)

By viewing policy analysis in these terms we can easily identify where research based on positive methodology can be employed to guide reform. In the case of policy analysis for school finance, therefore, we can first look to the sources that will assist in specifying objectives for school finance systems. We can then examine research which demonstrates how to achieve policy objectives, and particularly studies which explore the relationships between policy variables and policy impacts. (Cresswell, 1974, p.42)

The strategy employed in this policy research is as follows: (1) the social objectives, equal opportunity and equity in tax burden distribution, are defined as the basis by which the policy alternatives are analyzed; (2) alternative policies are identified and selected according to a criterion of political feasibility; (3) the necessary data is collected and simulated according to the specifications of the policy alternatives; (4) resultant tax burden redistributions of policy alternatives are identified; (5) results are analyzed to determine the comparative advantages of alternative school finance policies.

Within the scope of the tax burden redistribution effects of the different public education financing schemes, a number of specific questions should be considered: the changes in the public school finance scheme will benefit

which type of school districts (urban, suburban, poor, wealthy, etc.), and which socio-economic groups will gain or lose from the changes? For example, it has been predicted that to change from local school district level financing to full state funding of public education may shift the allocation of tax burdens from high property-valued urban center district to high income-earning suburban districts. Consequently, the suburban school districts may become relatively worse off in terms of increased tax payments while revenues received may decrease or remain the same. Consequently, rural school districts might show increases both in taxes paid and revenues received for public education purposes. Furthermore, it has been predicted that increasing the state's share in financing primary and secondary public education may cause shifts in the incidence of tax burdens from the low income to the high income-earners (a change in the vertical tax incidence structure), or from the low income-earners residing in the suburban school districts to the low income-earners residing in the urban centers (a change in the horizontal tax incidence structure).

Many of the reform alternatives to the existing public school financing system through legislative action, either toward different revenue distributive systems or different revenue-raising systems, avoid any substantial reference to the tax burden redistribution impacts of the proposed policy changes. These shortcomings must be



recognized by legislators in their policy deliberations. This study attempts to rectify these shortcomings by analyzing the tax burden distribution implications of revenue systems under different models of public school financing.

### The Intent and Limitations

This research has three basic components: (1) what are the existing public school financial disparities in a major metropolitan area (Portland); (2) how would various models of financing public education with different revenue structures, accompanied by different state aid distribution patterns, affect both the local school districts as entities and the individuals as taxpayers; (3) from a tax burden redistribution perspective, what would be the comparative policy implications of the alternative public education financing models? To answer these questions the study incorporated, under different school financing models, variations in revenue systems of local school districts, major provisions of the State of Oregon's tax system and the empirical and theoretical basis of the tax burden distribution criterion.

The equity and fairness in public school financing is the basic theoretical and analytical perspective employed in this study. The basic cost-benefit distributive equity criteria used in this research include: (1) allocation of costs progressively, and of benefits equally,

by income and wealth; (2) allocation of costs among households of like income and wealth, taking into account the family size; (3) allocation of costs so they do not discriminate against status groups; (4) allocation of tax burdens by methods that increase the general level of tax consciousness. (Shoup, 1969, pp.33-37)

There are several limitations to this study. First, the focus is explicitly on the revenue side of the fiscal operations. Since this study sought to investigate the question of tax burden redistribution, the school finance alternatives to be considered are based on various revenue formation structures. Secondly, attention is focused toward the tax burden redistributive aspects of governmental operations. This focus has been on both defining the existing tax burden distribution as well as on identifying how different school financing models shift tax burden distribution toward more or less Pareto optimal positions.\* Thirdly, this study assumed the possibility of a declining marginal utility of income. Within the premises of progressive taxation, a tax rate of ten percent for the \$4,000.00 income bracket does not represent the same burden as a ten percent taxation rate for the \$35,000.00 income bracket. Fourthly, this study assumes that the tax on the residential property shifts to the

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\*Pareto Optimality is a position wherein it is impossible to make anyone better off without making at least one entity worse off by any changes in the allocation of resources.

consumer. Controversy exists over this issue. (Aaron, 1974 and Ladd, 1975) Helen Ladd explained that, although the case indicating the shift of taxes on commercial and industrial property to the producer appears convincing, the situation for the residential property under many different market conditions does not indicate the same. Finally, resource allocation and stabilization aspects of alternative taxation policies are not dealt with because these issues go beyond the scope of the study.

#### The Principal Parameters

The conceptual framework of this study is based on the main theorem: if the factors of demand for public education and the factors of administrative procedures of public education are held constant among local school districts within a state, then suggested and/or prescribed changes in the public school financing schemes will consequently determine the direction and the magnitude of changes in the horizontal and vertical tax burden distribution pattern.

The research hypotheses and the procedure of analysis are as follows:

Hypothesis A, Present system--fiscal and locational variations in school districts are related to variations in tax burden distribution. (1) horizontal analysis--public education tax as a percent of income identifies horizontal tax burden distribution among equally-circumstanced

taxpayers; (2) vertical analysis--public education as a percent of income identifies vertical tax burden distribution among taxpayers with different income and wealth capacities.

Hypothesis B. Reform within the present system--changes in the state aid distribution formulas are related to changes in the tax burden distributive structure. (1) horizontal analysis--actual to simulated comparative indicator of horizontal tax burden redistribution among equally-circumstanced taxpayers; (2) vertical analysis--actual to simulated comparative indicator of vertical tax burden redistribution among taxpayers with different income and wealth capacities.

Hypothesis C. Increased state support--changes in the level and type of funding of public education are related to changes in the tax burden distributive structure.

(1) horizontal analysis--actual to simulated comparative indicator of horizontal tax burden redistribution among equally-circumstanced taxpayers; (2) vertical analysis--actual to simulated comparative indicator of vertical tax burden redistribution among taxpayers with different income and wealth capacities.

Hypothesis D. Full state funding--changes in public school financing scheme from partial to full state funding through income and/or statewide property taxation are related to changes in the tax burden distributive structure. (1) horizontal analysis--actual to simulated comparative

indicator of horizontal tax burden redistribution among equally-circumstanced taxpayers; (2) vertical analysis--actual to simulated comparative indicator of vertical tax burden redistribution among taxpayers with different income and wealth capacities.

As illustrated in Figure 1, the parameters of the study are based on the present and proposed school financing systems. The analytical scope is structured within the continuum of centralization of school financing functions. The criteria to differentiate the various financing models are based on the extent of state involvement in public school finance.

The postulates examined are based on the research paradigm formed within the perspectives of the stated hypotheses. It is the main postulate of this study that the following variables: (a) taxpayer socio-economic characteristics; (b) school district profiles; and (c) public school finance alternatives, are the primary determinants of public education tax burden distribution.

Postulate 1. A change in the state aid distribution criterion and/or a change in the level of state share in funding public schools results in relative changes in local school property tax rates among school districts and consequently caused relative changes in the existing cost distribution structure.

Postulate 2. A change in the state aid distribution

<u>Present System</u> <u>(1975-1976)</u>	State and Local Financing		<u>Full State Financing</u>
	<u>Reforms Within the</u> <u>Present System</u>	<u>Increased State</u> <u>Support</u>	
30 percent state support	A. Foundation phase- in plan	40 percent state support with in- creased state equalization level	A. Income and state- wide property tax- ation
	B. Local governmental yield plan		B. Income and state- wide business prop- erty taxation
	C. Total tax equali- zation plan		C. Income taxation only
	D. Available wealth equalization plan		

Figure 1. School finance alternatives: comparative progression toward greater state assumption of school finance.

criterion and/or an increase in the level of state share in funding public schools redistributes tax burden among individual taxpayers, and consequently causes relative changes in the existing horizontal and vertical tax burden distribution structures.

### The Sample Data Collection

To empirically test and verify the hypotheses and postulates of this study, three sets of data were used. The first set of data was based on a group of 15 unified public school districts in the Portland metropolitan area of Oregon. The actual data was organized to present the fiscal, demographic and socio-economic differences among the sample school districts. The organized school district sample data was used to indicate the present actual cost expenditure allocative structure in operation.

#### Sample School District Data: Group I--School District Profiles

1. per pupil property cash value
2. per pupil operational expenditures
3. local school district property tax rates
4. local noneducation property tax rates (municipal overburden)
5. teacher/student ratios
6. enrollment ratios
7. results of school budget elections
8. per capita income
9. per pupil state equalization grant to school districts
10. per pupil state aid to school districts

The second set of data was a hypothetically constructed representative population group of 45 taxpayers with different socio-economic backgrounds based on the level of annual income, family size and residential property

or rent value. This group of data was estimated and then projected to 1975 from 1970 data supplied by the U.S.

Census of Housing, Residential Finance, Vol. V, p.151 and by the U.S. Department of Commerce, Housing Characteristics by Household Composition, 1971, pp.5-8. (See Appendix D.)

Sample Data: Group II--Representative Taxpayer Characteristics

1. Taxable income status:
  - a. \$4,000.00
  - b. \$8,000.00
  - c. \$12,000.00
  - c. \$25,000.00
  - d. \$35,000.00
2. Family size:
  - a. single
  - b. head of a household with exemption 2
  - c. parent(s) with exemption 3
  - d. parent(s) with exemption 4
  - e. parent(s) with exemption 5
3. Residential property mortgage or rent values for a moderate shelter for the specific income level and family size (owner or renter).

The third set of data was based on the public school financing alternatives that are under consideration or may be considered by the Oregon State Legislature.

Sample Data: Group III--Public School Financing Alternatives (See Figure 1.)

1. The present system--1975-1976 school year
2. Reforms within the present system:
  - a. Foundation Phase-In Plan
  - b. Local Guaranteed Yield Plan
  - c. Total Tax Effort Equalization Plan
  - d. Available Wealth Equalization Plan
3. Increasing the state share (from 30% to 40%)
4. Full state funding:
  - a. income and statewide property taxation
  - b. income and statewide business property taxation
  - c. income taxation only



The actual data and most of the simulated data for the present school financing system and several proposed alternative models of school financing were available from many local, state and federal governmental sources. The collected data was organized and compiled under four categories based on the inquisitive direction and analytical procedures of the research.

Data Category 1--The Present Public School Financing System.

The data was organized to indicate:

- a. the fiscal, demographic and economic differences among school districts;
- b. the disparities in the state aid distribution criterion;
- c. horizontal and vertical tax burden distribution among the hypothetical taxpayers located in different school districts.

Data Category 2--The Reform Proposals Within the Present Financing System.

Under four different alternatives, the simulated data was organized to indicate the horizontal and vertical tax burden redistribution among the hypothetical taxpayers located in different school districts.

Data Category 3--Increased State Share in Funding Public Schools.

The simulated data was organized to indicate the horizontal and vertical tax burden redistribution among the hypothetical taxpayers located in different school districts.

Data Category 4--Full State Funding of Public Schools.

The simulated data was organized under three revenue source possibilities to indicate the horizontal and vertical tax burden redistributions.

The Analytical Approach

To build a complete input file containing calculated and simulated information, the raw data (including appropriate taxpayer information, sample school districts'

property tax rates, state income tax rate schedules, and the alternative school financing models) was programmed to indicate the public education tax burden distribution among 4,365 possible occurrences. The criterion upon which the tax burden distribution was based is the percent of taxable personal income paid to state and local jurisdictions to finance primary and secondary public schools in the State of Oregon. In calculating the public education tax as a percent of taxable income, the following formulas were used:\*

$$\begin{aligned} &\text{School district property tax rate} + \text{intermediate} \\ &\text{education district property tax rate} + \text{county} \\ &\text{school fund property tax rate} = \text{Local public} \\ &\text{education property tax rate per } \$1,000.00 \times \text{pro-} \\ &\text{perty value} = \text{Local Public Education Property} \\ &\text{Tax} - \left[ \text{if taxable income} < \$15,000.00 \right) \text{ property} \\ &\text{tax refund} \times \% \text{ Education (varies according to} \\ &\text{municipal overburden ratios)} \right] = \text{Net Public} \\ &\text{Education Property Tax} + \left[ \text{State Income Tax} \times \right. \\ &\left. \% \text{ of Education} \right] = \left[ \text{Total tax paid for public} \right. \\ &\left. \text{education} \times 100 \right] \div \text{Taxable income} = \text{Public} \\ &\text{Education Tax as \% of Taxable Income} \end{aligned}$$

The programmed public education tax burden distribution data and the school district data was appropriately combined and organized into a complete input file format. The complete input file was then quantitatively analyzed using the statistical package for social sciences. (See Appendix B.) (SPSS, Nie, 1975) The statistical analysis was conducted under three categories:

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\*See Appendix A for further extrapolation of state property tax refund and state income tax payment formulas.

Category I--General analysis of the present school finance situation. Under this category the data related to school district profiles is statistically analyzed. The following statistical methods were used: multiple regression-SPSS subprogram regression (Nie, 1975, pp.320-367) and scatter diagram of data points and simple regression-subprogram scattergram (nie, 1975, pp.293-300)

Category II--Analysis of horizontal tax burden distribution. Tax burden distribution equity situation among identically-circumstanced taxpayers, or groups of taxpayers, located in sample school districts is analyzed under the different school financing models. The following statistical methods were used: scatter diagram of data points and simple regression-subprogram scattergram (Nie, 1975, pp.293-300) and description of sub-populations-subprogram breakdown. (Nie, 1975, pp.249-266)

Category III--Analysis of vertical tax burden distribution. Tax burden progressivity situation among the alternative school financing models is analyzed. (The federal income tax structure is used as the standard. The following statistical methods are used: scatter diagram of data points and simple regression-subprogram scattergram. (Nie, 1975, pp.193-300) and description of sub-populations-subprogram breakdown. (Nie, 1975, pp. 249-266)

Most of the data collected for the present financing system and the school district fiscal profiles were

already computed and refined.\* However, two criteria needed further investigation and data computations. The first criterion to be investigated was the composition of the state budget for the fiscal year 1975-1976. Two variables were sought: (1) what portion of the total state revenue is composed of state income tax; and (2) what portion of the general fund expenditures is designated for funding public schools in Oregon. Personal income tax revenues were estimated to make up approximately 74 percent of the state's budget. Furthermore, public education expenditures, excluding higher education and community colleges, comprised 33.2 percent of the state's general funds budget. (State of Oregon Adopted Budget, 1975-1977, pp.5-20) In calculating the state personal income tax on individuals, the 1975-1976 actual state income tax rate schedules based on standard deductions were used. Also, the federal income tax rate schedules for 1975-1976 were used for two reasons: first, to calculate the federal income tax on individuals to be deducted from their state taxable income; and, secondly, to construct a progressive income taxation model against which the school financing alternatives could be compared. These results were used in analyzing the present school financing system as well as in estimating the composition

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\*The basic raw data was provided by the Oregon Department of Education and Legislative Revenue Office. (Oregon Department of Education, 1976 and Legislative Revenue Office Research Reports 20-76, 1976)

of the state budget for the school finance alternatives under consideration.

The second criterion of investigation and data computation was the municipal overburden indicator. The raw data to develop this indicator was acquired from appropriate county tax assessors' offices to determine the different level of property taxation for various educational and noneducational public services. However, because public service levels and boundaries within and among school districts varied considerably, to emphasize and magnify the municipal overburden situation, the highest possible noneducational property tax rates were selected for each sample school district. (Consolidated Tax Rates of Overlapping Taxing Districts, Multnomah, Washington, Clackamas and Columbia Counties, 1975-1976) The municipal overburden indicator (noneducational property taxes as percent of total property tax) was used in analyzing the fiscal problems facing urban school districts. Also, the municipal overburden indicator was used in calculating the public education portion of property tax refund applicable to certain income groups under different financing alternatives.

Some of the 1970 census data indicating the demographic and socio-economic characteristics of the sample school districts needed to be aggregated and/or updated. The school district income distribution and population

characteristics data was aggregated and estimated from the data provided by the Bureau of the Census, U.S. Department of Commerce, Series P-25, Nos. 685 and 698, 1977, and from the 1975 Building Permit Statistics by Columbia Region Association of Governments. (CRAG, 1977) The remainder of the school district data was furnished by the Oregon Department of Education and by the school districts.

The data collected to analyze the four options suggested by the reforms within the present school finance system alternative was already computed and simulated. The simulated property tax rates for the four alternatives were prepared by the University of Oregon study, State School Finance Alternatives. However, since the output of the University of Oregon's study was based on 1973-1974 school year data, the simulated property tax rate figures were projected for the 1975-1976 school year for this analysis. The procedure to project the simulated property tax rates to 1975-1976 was based on the actual change in per pupil property cash values and property tax rates between the school years 1973-1974 and 1975-1976.

The data simulated for the increased state share alternative was estimated from the 1975-1976 actual state and school district fiscal data. (Legislative Revenue Office, 1976) The estimations of the changes in school district property tax rates, the state level budgetary

allocations, and the resulting tax burden redistribution by increasing the state's share of funding public schools from 30 to 40 percent were based on the magnitude of the increase in the level of state aid to school districts and the relative decrease in the school district property tax rates.\* It was estimated that under this school financing alternative, 44.3 percent of the state's general funds budget will be used in financing primary and secondary public education.

Based on the recent legislative activities increasing state support to public education, the state has chosen to reallocate funds from other services to public education rather than to increase the state income tax rates. It is quite possible that the local school districts, rather than decreasing their levels of property taxation, may choose to increase the level of expenditures. However, within the parameters of this research, first, the levels of school district expenditures are assumed to remain the same for all alternatives except the full state options in which expenditures are uniform statewide; secondly, the revenue allocative pattern of the 1975 state budget is adjusted to reflect the change in the revenue allocations between other state government services and primary and secondary public education.

For the full state school financing alternatives,

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\*The calculated decrease in the local school district tax rates vary according to school districts' property wealth.

the 1975-1976 actual state and school district data was simulated to indicate the aggregate statewide revenue increases needed to finance public schools under three tax options: (1) income and statewide property taxation--26% increase in the state income tax level; (2) income and statewide non-residential property taxation--35% increase in the state income tax level; and (3) income taxation only--92% increase in the state income level.

The actual state personal income tax rate schedules for the 1975-1976 fiscal year were reconstructed according to the needed increase in state revenues for each taxation option under full state school finance alternative. (See Appendix C) It was calculated that under three tax options of full state assumption, the cost of primary and secondary public education in the State of Oregon would comprise approximately 62.3% of the state's general funds budget. The estimation of the aggregate statewide public school revenue under the full state funding models was based on 1975-1976 statewide average per pupil expenditures. This assumes the political possibility of lowering the high-expenditure school districts to the statewide average. As indicated by many studies, in the short term a change to full state assumption of school financing may increase the aggregate cost. This occurs because many full state financing alternatives propose to increase the low expenditure school districts to a statewide average without decreasing the level of expenditures in high-spending



districts. Consequently, since the school districts are prevented from increasing the level of expenditures, the statewide expenditure level will be established without much political turmoil. From these premises it may be stated that a statewide uniform expenditure level will develop with initial increases in total cost, balanced by later decreases in total cost resulting from the expenditure level control set by the state. Therefore, it is assumed by this study that, all things being equal, the overall cost of public education will, in the long run, remain the same.

PART II

ANALYSES OF ALTERNATIVES AND  
RESULTANT TAX BURDEN DISTRIBUTIONS

## CHAPTER IV

### OREGON PUBLIC SCHOOL FINANCE 1975-1976

In the State of Oregon combined state and local operational expenditures for the 1975-1976 school year exceeded 659 million dollars. The state provided over 200 million dollars of aid to school districts. This constitutes approximately 30 percent of the state's total public school expenditures. Of that 200 million dollars of state aid, over 162 million dollars, over 80 percent, was distributed through flat grants and categorical aid. The remaining 20 percent, 38 million dollars, was distributed to school districts through the equalization fund. (State of Oregon Department of Education)

The distribution of equalization funds is based on a statewide basic program (or foundation) level. For the 1975-1976 school year the statewide basic program level was 827 dollars per pupil.\* State equalization grants are given to school districts which cannot raise sufficient revenues to provide educational services at the statewide basic program level. The main deficiency of the foundation-based state aid distribution criterion is that, while some property-rich school districts would raise revenues well above the foundation level, some property-poor school districts would not be able to raise above the foundation level with relatively greater

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\*This is well below the per pupil operational expenditures of school districts.

tax effort. (Pierce, et al, 1975, p.22)

During the 1975-1976 school year, the school districts in the State of Oregon operated with different fiscal capabilities, resulting in different levels of educational service. These differences in levels of education service delivery, in terms of quantity and quality, are functions of fiscal capacity and respective communities which the school districts serve. From this perspective the urban-suburban-rural differentiation, based on the available school district and census data which indicates the fiscal and socio-economic variations among the sample school districts, is a useful tool in analyzing the existing inequities in public education service levels and tax burden distributions.

#### School District Profiles

The per capita income figures among the unified school districts in Portland Metropolitan Area vary from a high of \$7,446.00 in Lake Oswego to a low of \$3,936.00 in Forest Grove.\* Per capita income distribution indicates that, in general, rural school districts have low per capita income and suburban districts high per capita income. The urban central areas, where most of the low-income families are located, appear to have high per capita income figures. The Portland urban area contains high-income residential enclaves which distort the urban

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\*Based on estimated data from sources provided by the U.S. Department of Commerce Census Bureau (1971) and CRAG (1977).

per capita income figures. (Table IV)

The per pupil property cash value figures among the sample school districts vary from a high of \$89,127.00 in the Portland school district to a low of \$36,533.80 in the Corbett school district. In general both urban and suburban school districts have relatively high per pupil property cash values and the rural school districts relatively low per pupil property cash values. Two factors contribute to the high per pupil property cash values in the urban school districts: (1) the concentration of commercial and industrial properties in urban areas and (2) the high population/student ratios. On the other hand, the suburban school districts appear to have relatively lower per pupil property cash values when compared to urban school districts. The factors that contribute to this situation are the high concentration of residential properties in the suburban school districts and the low population/student ratios. (Tables IV and VI)

The analysis of the relationship between the level of per capita income and the per pupil property cash values indicates that the relationship between these two variables is not statistically significant at the .05 significance level. [ $r=.29$ ] Accordingly, within the parameters of this research the property wealth of a school district does not indicate the level of income wealth of its residents. As cited in the literature review, several studies support this finding. (Sacks, 1973; Ladd,

TABLE IV  
SCHOOL DISTRICT FISCAL AND ECONOMIC DATA  
1975-1976

School Districts	Per Capita Income*(\$)	Per Pupil Prop. Cash Value (\$)	Property Tax Rate (Mills)	Per Pupil Oper. Expenditures(\$)
Portland	\$5,190	\$89,127.02	14.59	\$1,478.38
Parkrose	4,930	61,778.31	18.16	1,329.42
David Douglas	4,684	49,275.55	20.70	1,370.72
Corbett	4,050	36,533.80	23.25	1,192.36
Reynolds	4,567	56,260.32	16.31	1,137.27
Beaverton	5,503	63,239.03	21.17	1,426.57
Tigard	5,149	79,620.98	15.61	1,274.26
Sherwood	4,100	63,004.22	18.01	1,211.89
Banks	4,202	40,882.66	18.81	1,070.24
Forest Grove	3,936	41,212.64	20.46	1,111.82
Oregon City	4,389	48,859.39	20.17	1,168.68
West Linn	5,174	67,841.73	20.69	1,520.60
Lake Oswego	7,446	59,992.04	19.16	1,181.22
Scappoose	4,669	42,885.91	16.21	1,170.19
St. Helens	4,643	71,492.74	14.23	1,219.26

Source: State of Oregon Legislative Revenue Office Research Report R-I, No.20-76, 1976; and U.S. Department of Commerce, Population Estimates and Projections, Series P-25, No. 698, April, 1977.

\*Based on estimated data from sources provided by the U.S. Department of Commerce Census Bureau (1971) and CRAG (1977).

1975 and Gatti, 1976) Thus, the per pupil property cash value may not be a reliable measurement of the actual wealth, both in terms of property and income, of the residents of a school district. Therefore, the present system of distributing state aid based on the per pupil property wealth of school districts may result in redistribution of income from relatively poor to relatively well-to-do school districts.

The sample data indicates that there are considerable variations in public education property tax rates, from a low of \$14.23 per \$1,000.00 assessed property value in the St. Helens school district, to a high of \$23.25 per \$1,000.00 assessed property value in the Corbett school district. A simple regression of public education property tax rates and per pupil property cash values of sample school districts indicates that there is an inverse relationship between these two variables.  $\sqrt{r} = -.617$  (Figure 2) This supports, to some degree, an already recognized fact that the wealthier the school district is in terms of real property, the lower are the public education tax rates. However, the strength of this relationship is lower than expected.  $\sqrt{r^2} = .377$  It resulted, principally, from the deviant behavior of two suburban (Beaverton and West Linn) and several rural school districts. (Figure 2) The high property tax rates in Beaverton and West Linn, relative to their per pupil

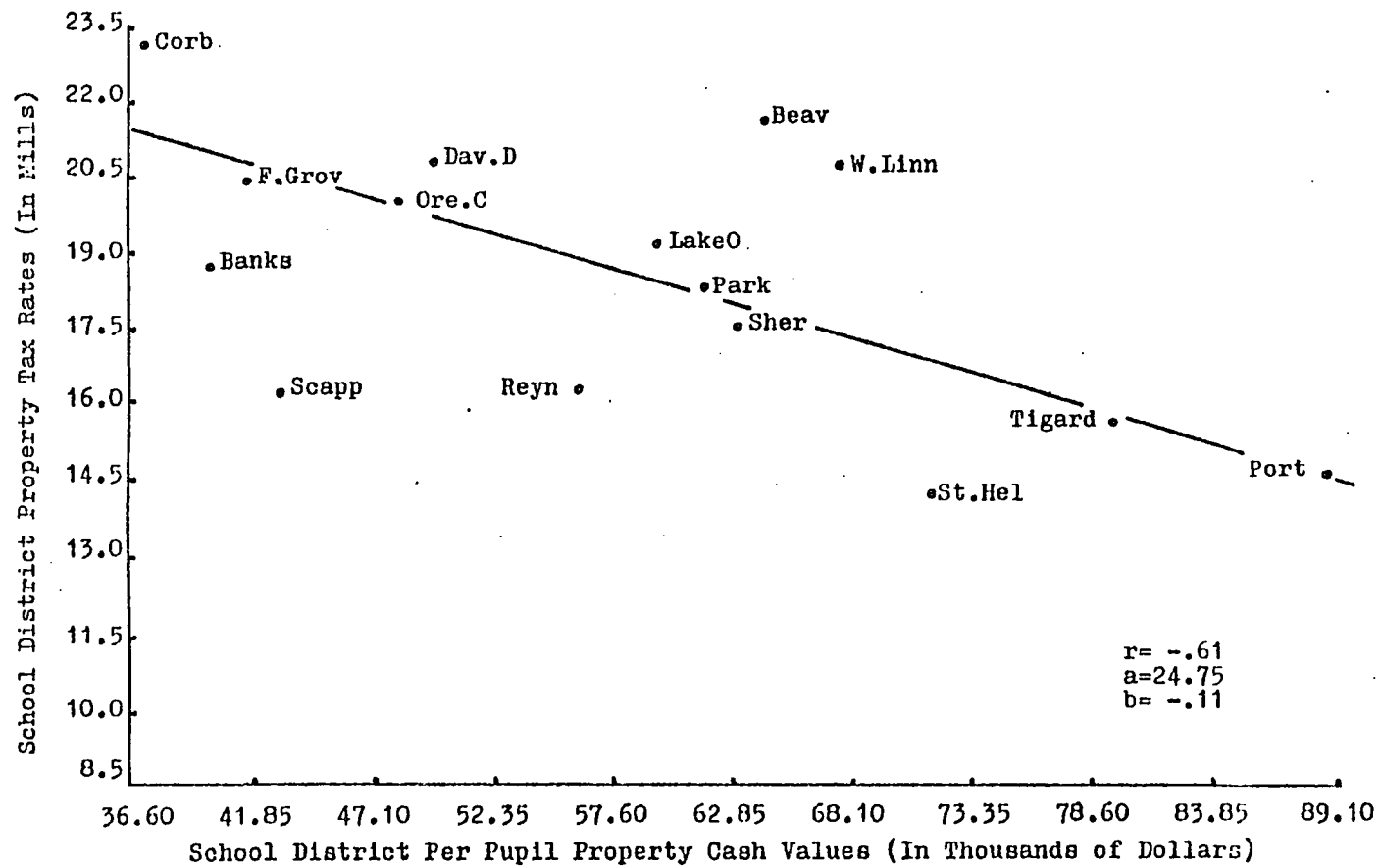


Figure 2. Scattergram of school district property tax rates and per pupil property cash values, 1975-1976.



property cash values, have been caused both by high citizen demands on educational standards and special educational programs designed to meet the needs of the student population. West Linn School District has the highest per pupil operational expenditure and Beaverton School District the third highest among the sample school districts. The levels of per pupil operational expenditures of these two districts supports this contention. (Figure 3) On the other hand, most rural school districts, relative to their per pupil property cash values, appear to have low tax rates as well as low operational expenditures

The per pupil operational expenditure profiles of the sample school districts indicate a significant positive relationship between the level of public education expenditures and the property wealth of school districts.  $[r=.63]$  (Figure 3) Figure 3 illustrates that most sample rural school districts with low property wealth also have low per pupil operational expenditures. This may suggest a possible relationship between the per pupil operational expenditures and the level of tax rates. However, the regression analysis indicates that there is no significant relationship between these two variables. The level of property tax rates in a school district do not determine the level of per pupil operational expenditures.

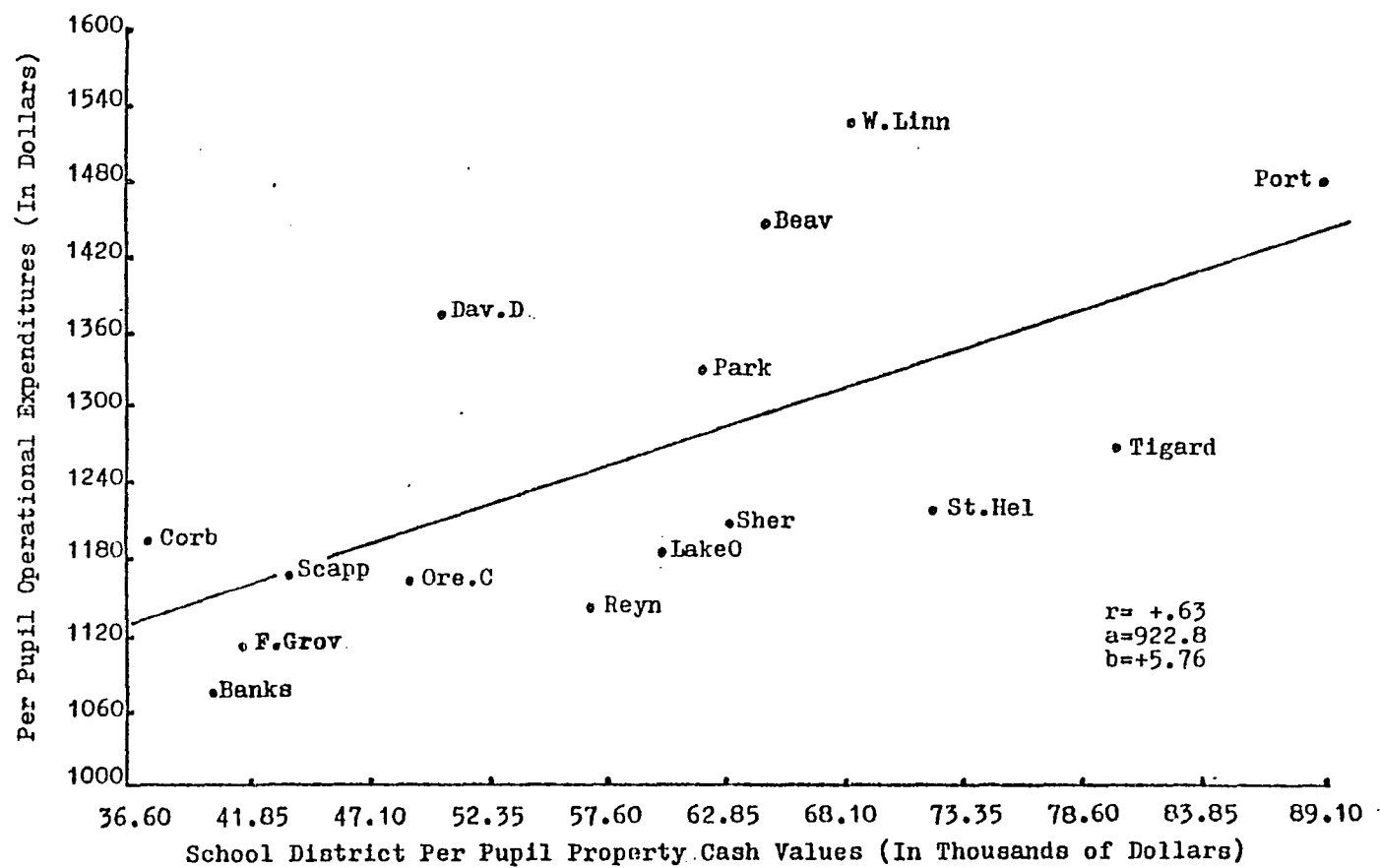


Figure 3. Scattergram of per pupil operational expenditures and per pupil property cash values, 1975-1976.

The multiple regression results of the municipal overburden issue indicates a positive significant relationship  $\sqrt{R}=.847$  between the municipal property tax overburden (measured in terms of percent of total local property taxes diverted for noneducation public services) and (1) the population per pupil  $\sqrt{r}=.787$  and (2) the number of pupils per teacher  $\sqrt{r}=.637$ . School districts with a high concentration of individuals and families with no school age children appear to have a high municipal property tax overburden. A locational analysis of this phenomenon indicates that the school districts located in urban areas and its peripheries have relatively higher levels of municipal overburden. (Tables V and VI) The significant relationship between the municipal overburden indicator and the number of pupils per teacher indicates that urban school districts with greater municipal overburdens would have relatively more students per teacher. (Table VII) Although, in general, urban school districts have relatively more students per teacher, this does not necessarily imply crowded classrooms. Depending upon the education curriculum and program content, a low pupil/teacher ratio of some school districts (especially suburban) may imply an emphasis on certain special and/or extra education programs resulting in increased FTE.

One implication of this phenomenon is that urban school districts with greater need for special education

TABLE V  
LOCAL PROPERTY TAX AND MUNICIPAL OVERBURDEN  
1975-1976

School Districts	(1) Local Prop. Tax Rate (Mills)	(2) Pub. Educ. Prop. Tax Rate(Mills)	(2)as % of (1)	(3) Non-Educ.Prop. Tax Rate(Mills)	(3)as % of (1)
Port.	30.23	14.59	48.2	15.64	51.8
Park.	33.80	18.16	53.7	14.64	46.3
Dav.D.	36.34	20.70	56.9	15.64	43.1
Corb.	34.05	23.25	68.3	10.80	31.7
Reyn.	28.59	16.31	57.0	12.28	43.0
Beav.	34.38	21.27	61.9	13.11	38.1
Tigard	24.53	15.61	63.6	8.92	36.4
Sher.	25.22	18.01	71.4	7.21	28.6
Banks	29.76	18.81	63.2	10.95	36.8
F.Grov.	26.70	20.46	76.6	6.24	23.4
Ore.C.	33.11	20.17	60.9	12.94	39.1
W.Linn	29.12	20.69	71.0	8.43	29.0
Lake O.	30.19	19.16	63.5	11.03	36.5
Scapp.	24.12	16.21	67.2	7.91	32.8
St.Hel.	22.50	14.23	62.4	8.47	37.6

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Source: State of Oregon Department of Education and County Tax Assessor Offices  
(Multnomah, Washington, Clackamas and Columbia).

TABLE VI  
SCHOOL DISTRICT MUNICIPAL OVERBURDEN  
1975-1976

School Districts	Non-Educ. Prop. Tax As % of Total Local Prop. Tax																		High	
	Low	20%25%30%35%40%45%50%																		
F. Grove	.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
Sherwood	.	.	.	.	.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	
West Linn	.	.	.	.	.	.	.	x	.	.	.	.	.	.	.	.	.	.	.	
Corbett	.	.	.	.	.	.	.	.	x	.	.	.	.	.	.	.	.	.	.	
Scappoose	.	.	.	.	.	.	.	.	.	x	.	.	.	.	.	.	.	.	.	
Tigard	.	.	.	.	.	.	.	.	.	.	x	.	.	.	.	.	.	.	.	
Lake Oswego	.	.	.	.	.	.	.	.	.	.	.	x	.	.	.	.	.	.	.	
Banks	.	.	.	.	.	.	.	.	.	.	.	x	.	.	.	.	.	.	.	
St. Helens	.	.	.	.	.	.	.	.	.	.	.	.	x	.	.	.	.	.	.	
Beaverton	.	.	.	.	.	.	.	.	.	.	.	.	.	x	.	.	.	.	.	
Oregon City	.	.	.	.	.	.	.	.	.	.	.	.	.	.	x	.	.	.	.	
Reynolds	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	x	.	.	
David Douglas	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	x	.	
Parkrose	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	x	
Portland	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	x

TABLE VII  
SCHOOL DISTRICT TEACHER/STUDENT  
AND ENROLLMENT RATIOS

School Distr.	Teacher/Student Ratio (# of students/teaching FTE)	Enrollment Ratio (population/student)
Port.	21.78	5.31
Park.	18.04	5.62
Dav.D.	17.70	6.04
Corb.	17.60	3.44
Reyn.	16.91	4.70
Beav.	17.77	4.41
Tigard	17.89	4.08
Sher.	16.60	3.11
Banks	17.68	3.43
F.Grov.	17.34	3.67
Ore.C.	17.51	3.88
W.Linn	15.74	3.53
Lake O.	19.03	3.64
Scapp.	17.31	3.08
St.Hel.	16.25	3.52

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Source: School Districts and Columbia Region Association of Governments (CRAG), Building Permit Statistics (1977) and General Planning Data and Projections (1977).

programs are limited in exerting greater tax efforts due to municipal overburden. This results in less per pupil revenues from local sources and from the state. Consequently, urban school districts are limited in increasing their FTE to support special and/or extra education programs.

The analysis of the 1975-1976 school district budget elections results (Table VIII) shows that the fiscal variable, state aid as a percent of operational expenditures, is directly correlated to the political behavior variable, percent voted "yes" in the school district budget elections.  $\bar{r}=.777$  (Figure 4) In Figure 4 the data point distribution from a locational perspective indicates a strong urban-rural differentiation in terms of political support and state aid distribution. Rural school districts, relative to urban and suburban school districts, appear to receive greater political support for the approval of school budgets.

It is evident that the higher the level of per pupil state aid as a percent of operational expenditures, the higher will be the probability of voter approval of the school district budget measures. Often the percent of operational expenditures financed through state aid is not a known fact to voters. Some indirect intervening factor (such as the size of the budget) affected by the pattern of state aid distribution may influence a school district's voting behavior.

TABLE VIII  
SCHOOL DISTRICT BUDGET  
ELECTIONS 1975

School Districts	# of "No" Votes	# of "Yes" Votes	% Voted "Yes"
Port.*	22,834	26,931	54.1
Park.	1,548	1,866	54.7
Dav.D.	1,523	1,601	51.3
Corb.	189	251	57.0
Reyn.	785	1,241	61.3
Beav.	6,646	6,774	50.5
Tigard	1,866	1,883	50.2
Sher.	474	635	57.3
Banks	142	230	61.8
F.Grov.	712	922	54.4
Ore.C.	1,390	1,511	52.1
W.Linn	948	1,003	51.4
Lake O.	1,808	1,884	51.0
Scapp.	564	983	63.5
St.Hel.	930	933	50.1

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Source: State of Oregon Department of Education, Summary of Local District Budget and Levy Elections, 1975.

\*Special Levy Election, 1975 (no budget election that year).



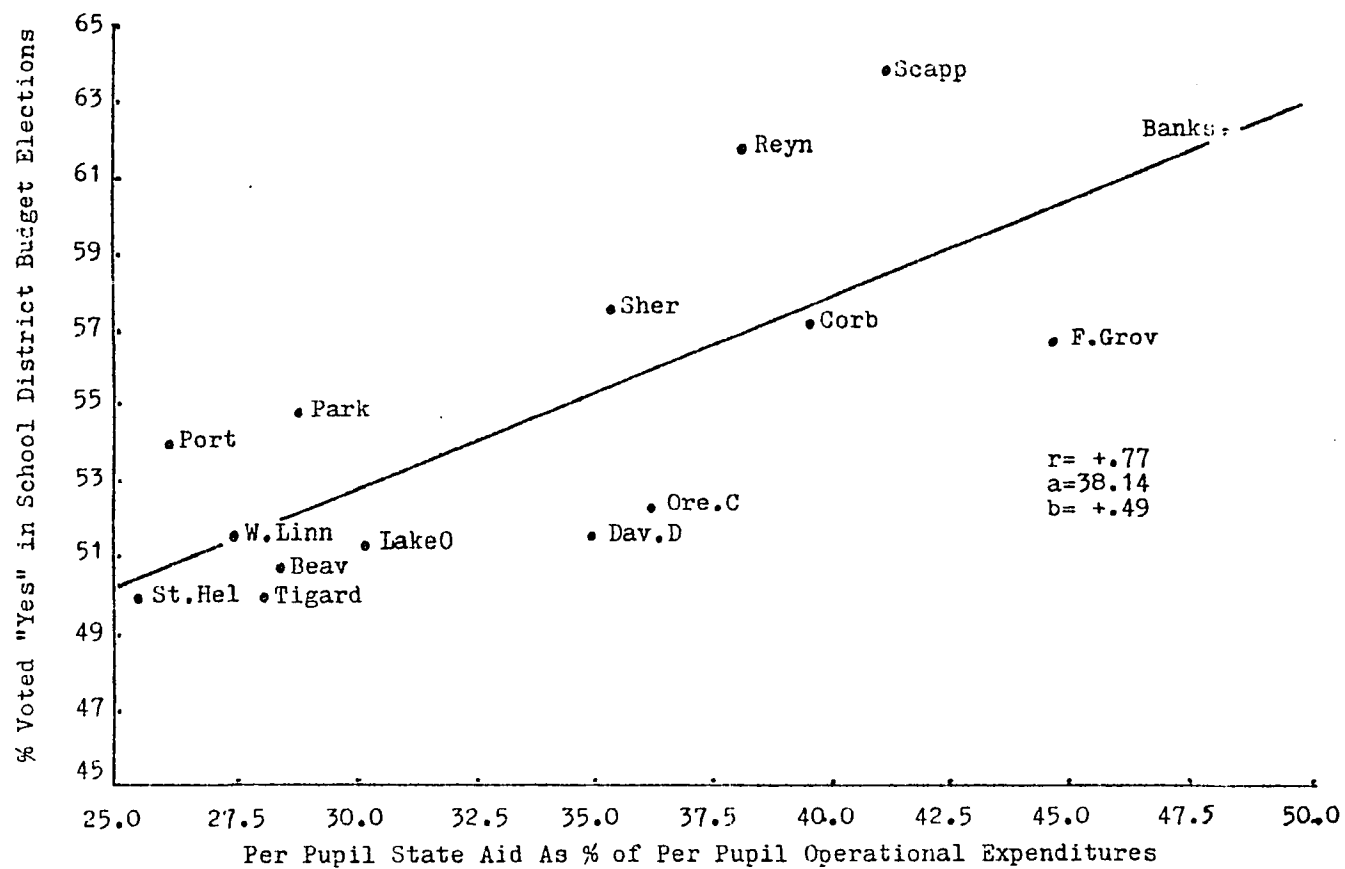


Figure 4. Scattergram of percent voted "yes" and per pupil state aid as per nt of operational expenditures, 1975-1976.

### State Aid Distribution to School Districts

State aid distribution to school districts has been measured under four interrelated categories: (1) per pupil state aid; (2) per pupil state equalization aid; (3) per pupil state aid as a percent of per pupil operational expenditures and (4) per pupil state equalization aid as a percent of per pupil operational expenditures. The data indicates that the variations in per pupil state aid among the sample school districts are significant, from a low per pupil state aid of \$325.08 in the Tigard school district to a high of \$516.33 in the Banks school district. (Table IX) In general, per pupil state aid distribution patterns indicate that rural districts receive a relatively larger share of the total state aid as well as state equalization grants. The three highest per pupil state aid and equalization grants were received by the rural school districts of Banks, Forest Grove and Scappoose. (Figure 4) On the other hand, the Tigard, St. Helens and Portland school districts received no equalization grants from the state. (Table IX)

Analysis of the relationship between (1) per pupil total state aid and (2) equalization grants and per pupil property cash values, as expected, is significant and inversely correlated.  $\sqrt{r} = -.78$  and  $r = -.90$  respectively (Figures 5 and 7) The statistical significance of these high correlations is a result of the state aid distribution

TABLE IX  
STATE AID DISTRIBUTION  
1975-1976

School Districts	Total State Aid/Pupil(\$)	State Equal. Aid/Pupil(\$)	Total State Aid/Pupil As % of Oper.Exp./Pupil	State Equal.Aid/Pupil As % of Expen./Pupil
Port.	\$401.23	\$ 0	27.14	0
Park.	377.33	32.04	28.38	2.41
Dav.D.	475.71	31.04	34.71	9.56
Corb.	469.91	155.00	39.41	13.00
Reyn.	430.69	104.92	37.87	9.23
Beav.	396.04	57.58	27.76	4.04
Tigard	325.08	0	25.51	0
Sher.	437.37	104.87	36.09	8.65
Banks	516.33	198.83	48.24	18.58
F.Grov.	501.64	183.14	45.12	16.47
Ore.C.	424.00	106.42	36.28	9.11
W.Linn	417.60	75.03	27.46	4.93
Lake O.	354.93	27.67	30.05	2.34
Scapp.	482.29	169.16	41.22	14.46
St.Hel.	338.27	0	27.75	0

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Source: State of Oregon Legislative Revenue Office, Research Report R-I, No.20-76, 1976.

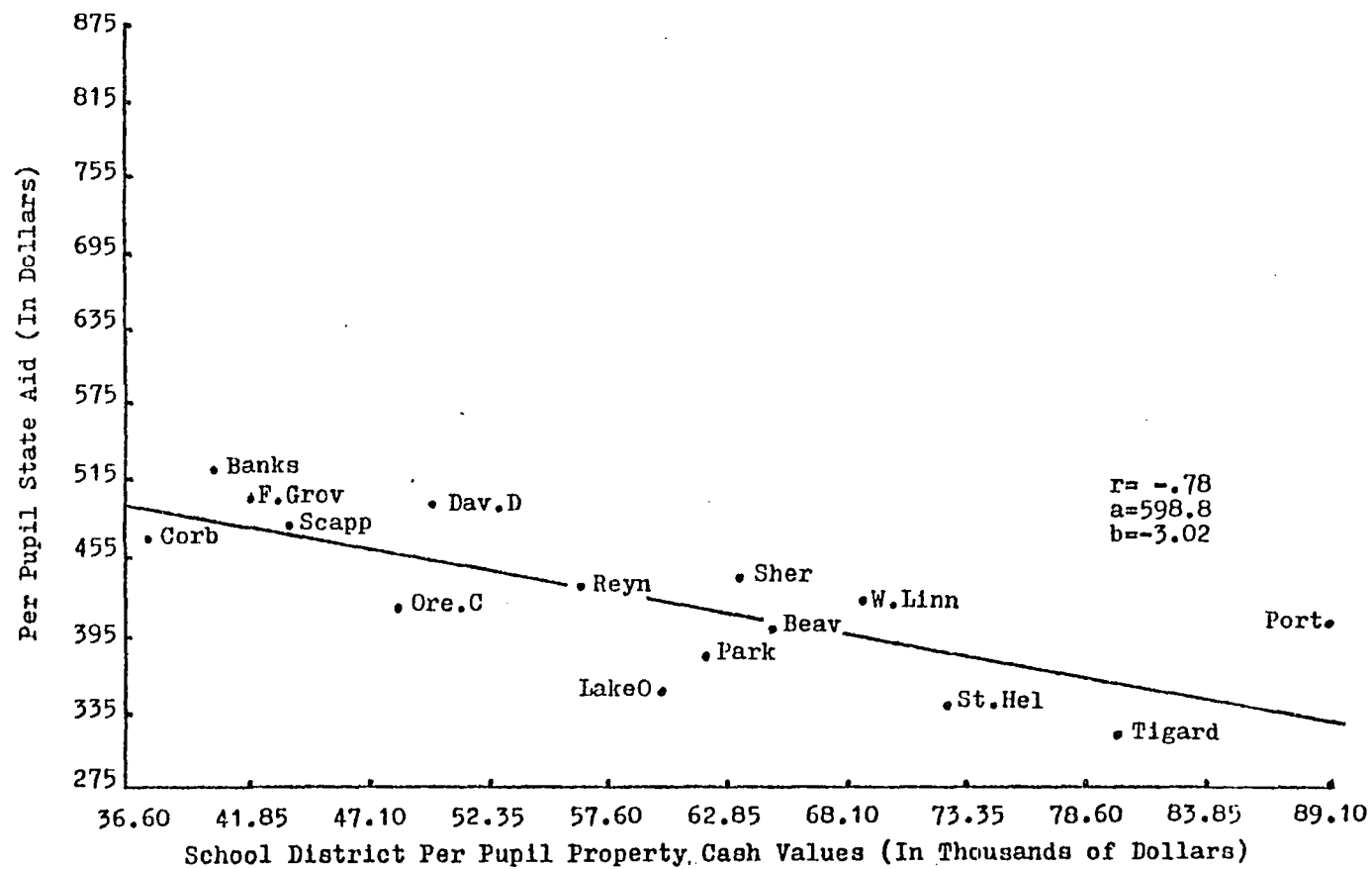


Figure 5. Scattergram of per pupil state aid and per pupil property cash values, 1975-1976.

criterion which is primarily based on the taxable property wealth of the school districts. (Figure 5)

The histogram (Figure 6) illustrates the state aid distribution pattern among the sample school districts. Two school districts with almost equal per pupil operational expenditures, Lake Oswego and Scappoose, receive \$28.00 and \$160. per pupil state equalization grants respectively. The Lake Oswego school district, a relatively high property value and high income-earning suburban community, receives comparably less in equalization grants than the property and income-poor rural school district of Scappoose. On the other hand, the suburban West Linn school district, a relatively property-rich and high income-earning school district, receives comparatively more per pupil state aid than the property-rich, low income-earning Portland School District. This clearly exemplifies the property wealth-based inequities in the state equalization aid distribution pattern.

While the per pupil categorical state aid distribution appears to vary slightly, the per pupil state equalization aid varies from zero for three school districts (Portland, Tigard and St. Helens), to \$199.00 per pupil for the Banks school district. (Figures 6 and 7) Further analysis of the per pupil state equalization aid as a percent of per pupil operational expenditures indicates that approximately one half of the Banks school district's

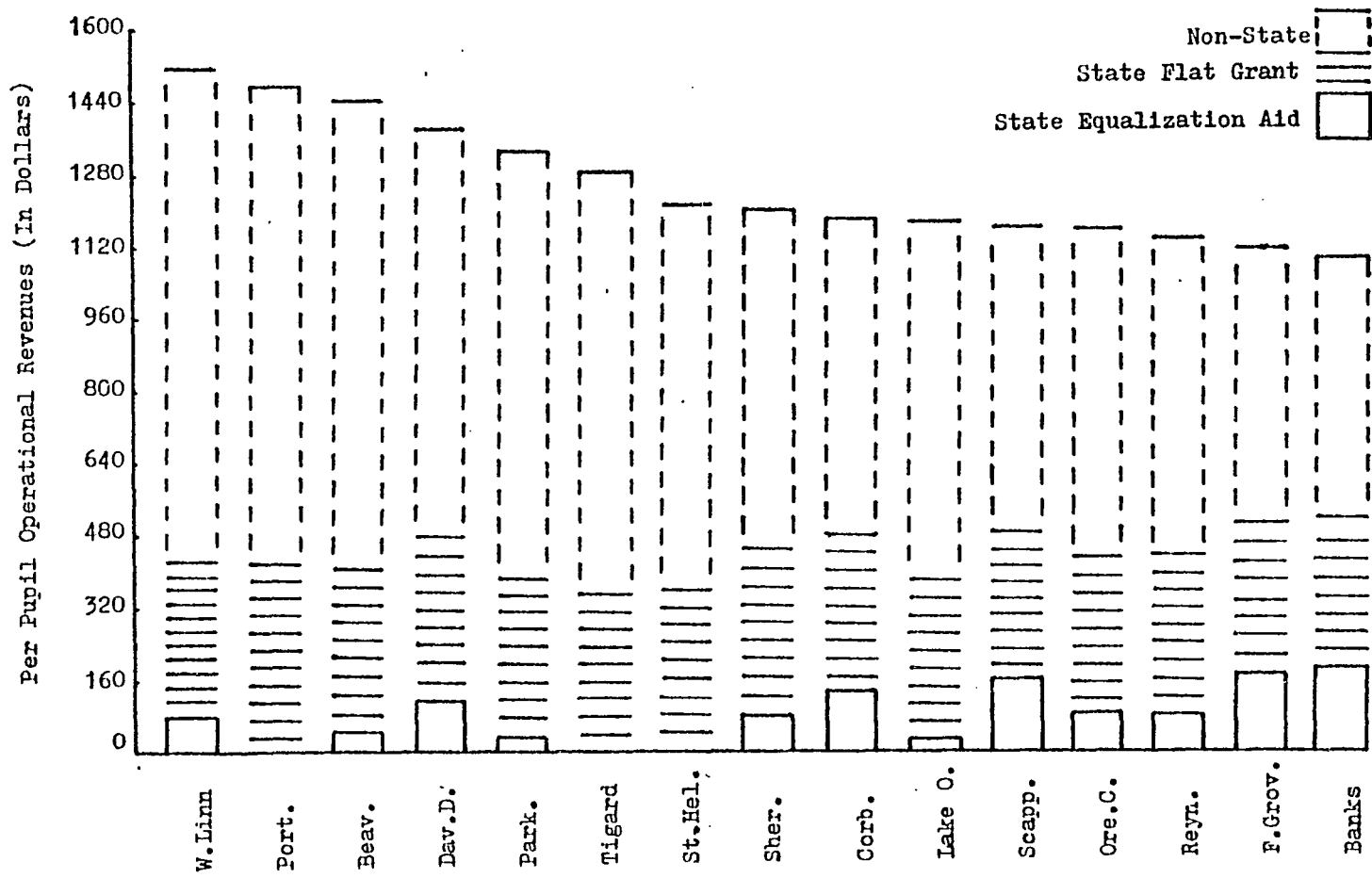


Figure 6. Composition of school district per pupil operational revenues -- 1975-1976.  
Source: Oregon Department of Education

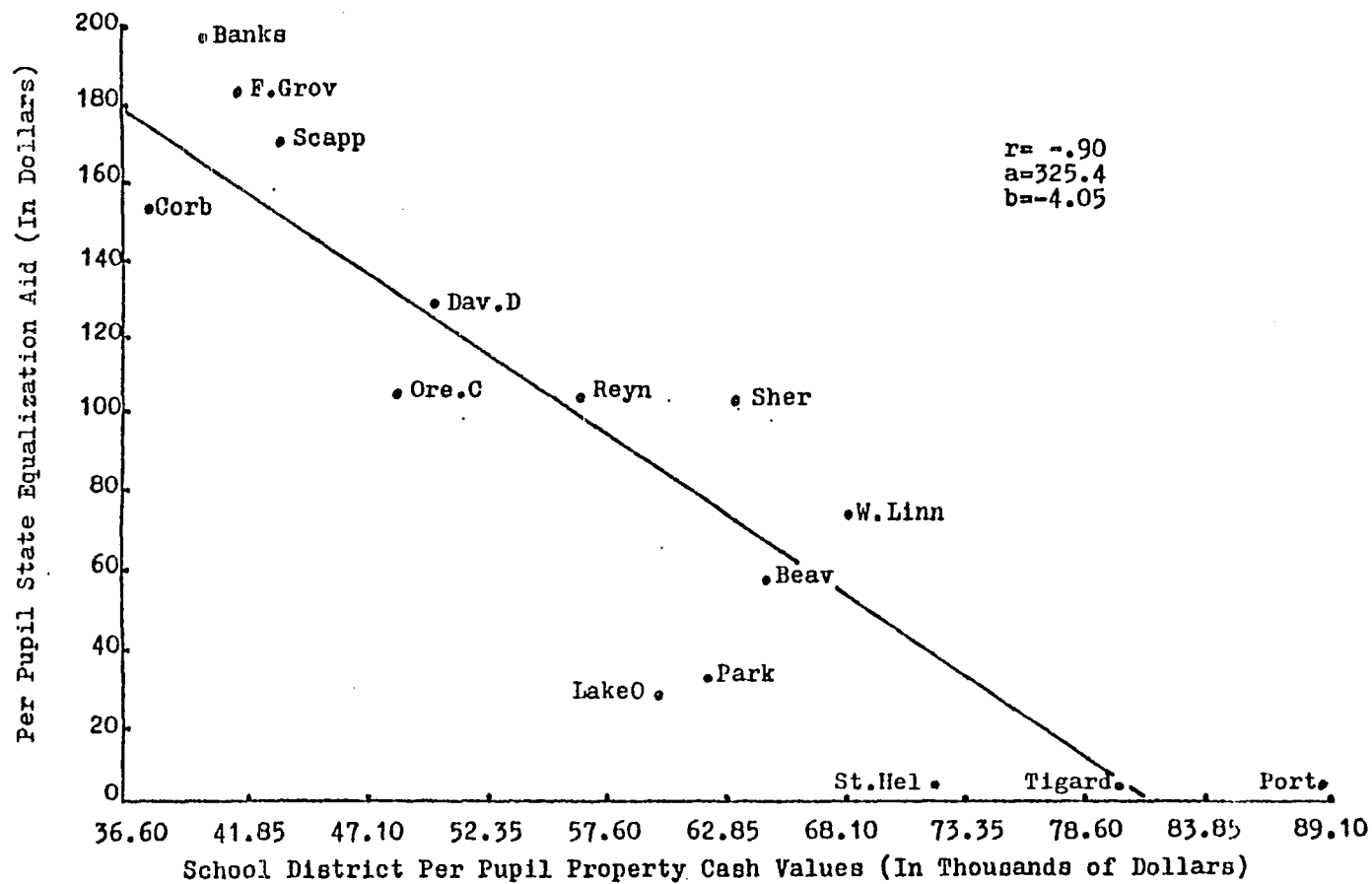


Figure 7. Scattergram of per pupil state equalization aid and per pupil property cash values, 1975-1976.

operational expenditures comes from state aid, while only 25 percent of the Tigard school district's operational expenditures are supplied by state aid. While one-fifth of the Banks school district's operational expenditures are supplied by state equalization grants, three school districts received no equalization grants. This further supports the finding that presently state aid distribution is based primarily on the per pupil property wealth of the school districts. In relating the per pupil total state aid as a percent of the per pupil operational expenditures to per pupil property cash values, a significant inverse correlation has been found.  $[r = -.857]$  (Figure 8) Therefore, under the present state aid distribution formulas, the less per pupil property cash value a school district has, the higher will be the percentage of its per pupil operational expenditures provided by the state. (Figure 8) This places most of the rural and some of the suburban school districts in a relatively advantageous fiscal position.

#### Public Education Tax Burden Distribution

The present form of public school financing has been heavily criticized because of the inequities in tax burden distribution. This study has analyzed the tax burden distribution problem in public school financing from two distinct perspectives: the horizontal and the vertical tax burden distributions.



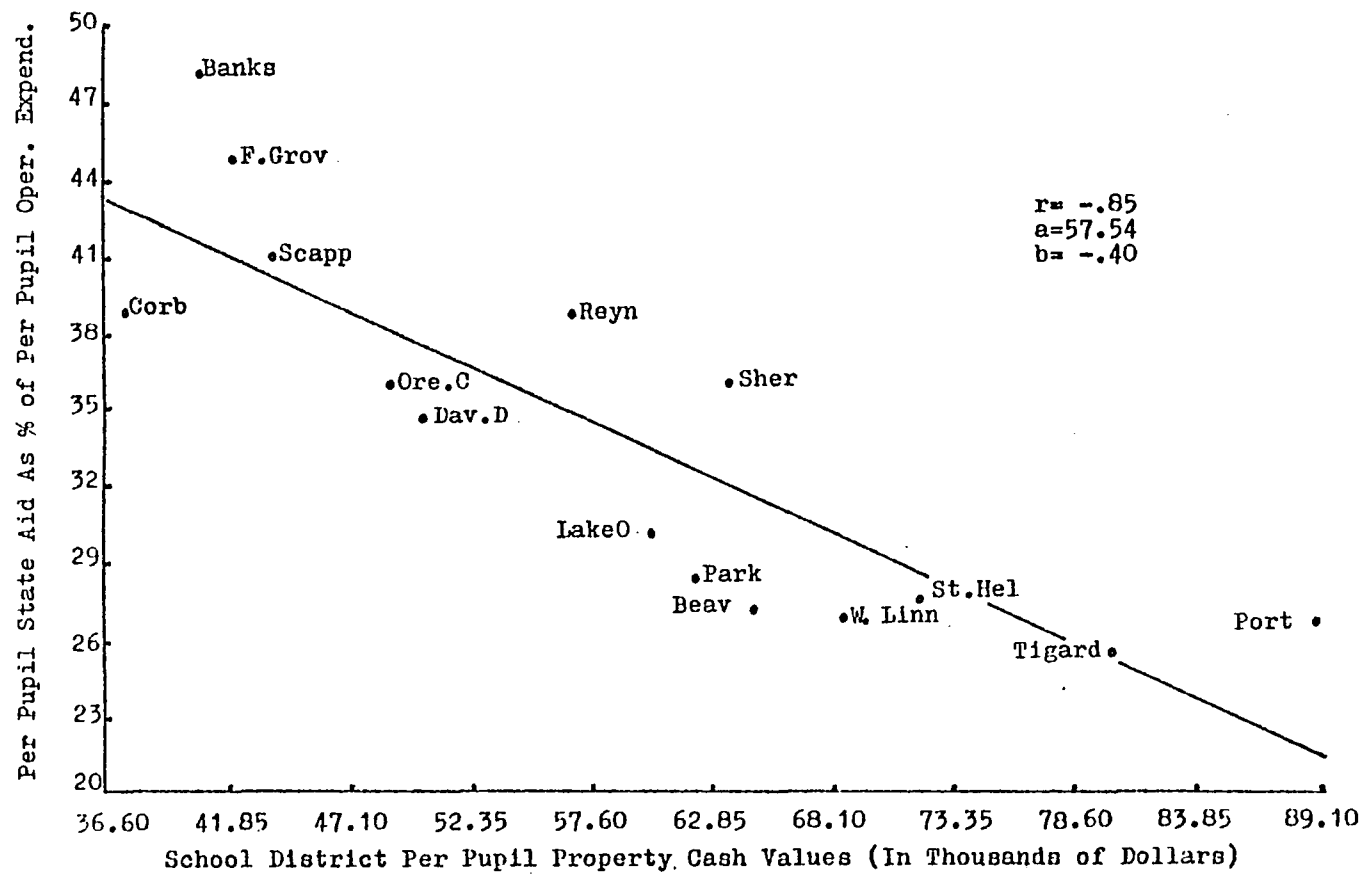


Figure 8. Scattergram of per pupil state aid as percent of per pupil operational expenditures and per pupil property cash values, 1975-1976.

The horizontal tax burden distribution analysis is based on the level of tax payments by equally-circumstanced individual taxpayers. Theoretically, a just and fair tax system should distribute the cost of services in a way that does not differentially treat the equally-circumstanced taxpayers. This situation will be referred to as the "horizontal tax burden equity."

To analyze the horizontal tax burden equity situation under the present public school financing scheme, a sample of 45 hypothetical taxpayers were compiled. Each taxpayer's contribution to the financing of public elementary and secondary education at the state and local level has been carefully calculated. Each calculated figure was converted into a variable indicating each taxpayer's public education tax payments as a percent of his/her taxable income. A representative cross-tabulation table (15x5) was designed, out of the total (15x45) cross-tabulation table, to indicate the magnitude of the horizontal tax burden inequity resulting from the method of public school finance during the 1975-1976 school year.

Each category of representative taxpayers with equal taxable incomes, family size and property status (owner or renter), located in different school districts, exemplifies the magnitude of the existing horizontal tax burden inequity situation. ( Table X ) "Taxpayer-2," with a \$4,000.00 taxable income, five-member

TABLE X  
HORIZONTAL TAX BURDEN DISTRIBUTIONS\*  
1975-1976

School District	Public Education Tax Payment As Percent of Income				
	"Taxpayer-1" \$4000 Inc. 5-Memb.Fam. Owner	"Taxpayer-2" \$4000 Inc. 5-Memb.Fam. Renter	"Taxpayer-14" \$4000 Inc. Single Renter	"Taxpayer-17" \$12000 Inc. 5-Memb.Fam. Owner	"Taxpayer-35" \$25000 Inc. 5-Memb.Fam. Owner
Corb.	7.63	10.70	6.61	6.73	7.81
Dav.D.	7.13	9.70	6.15	6.12	7.13
Beav.	7.03	9.82	6.14	6.24	7.28
Ore.C.	6.47	9.21	5.77	5.95	6.99
Park.	5.93	8.34	5.33	5.45	6.46
W.Linn	5.87	9.06	5.51	6.01	7.13
Lake O.	5.64	8.49	5.27	5.65	6.73
Banks	5.46	8.30	5.15	5.55	6.64
F.Grov.	5.23	8.68	5.17	5.90	7.07
Reyn.	4.53	7.10	4.42	4.92	5.92
Port.	4.32	6.48	4.23	4.52	5.52
Sher.	4.24	7.46	4.47	5.26	6.43
Scapp.	3.56	6.58	3.98	4.80	5.95
Tigard	3.52	6.39	3.91	4.67	5.79
St.Hel.	2.70	5.50	3.37	4.25	5.38

\*By representative taxpayer categories

family and rented home, pays 10.7 percent of his/her income to finance public schools if he/she resides in the Corbett school district. On the other hand, the equally-circumstanced taxpayer located in the St. Helens school district pays only 5.5 percent of his/her income to finance public schools. (Table X and Figure 9) Also, "taxpayer-17," with a \$12,000.00 taxable income, five-member family and a privately-owned home, pays 6.73 percent of his/her income to finance public schools if he/she resides in Corbett School District. On the other hand, the equally-circumstanced taxpayer located in Portland School District would pay only 4.52 percent of his/her income to finance public schools. (Table X and Figure 10)

Analysis indicates that there is no relationship between the level of public education tax as a percent of income and the level of per pupil operational expenditures in the sample school districts.  $\bar{r} = -.067$  Therefore, the existing horizontal tax burden inequities are not determined by differences in per pupil expenditures among sample school districts. For example, a relatively higher payment by the taxpayer located in the Corbett school district does not necessarily indicate higher returns in terms of per pupil operational expenditures. In actuality per pupil operational expenditures for the 1975-1976 school year were \$1,192.00 in the Corbett school district as against \$1,219.00 in the St. Helens school district. (Table IV) The taxpayer located in

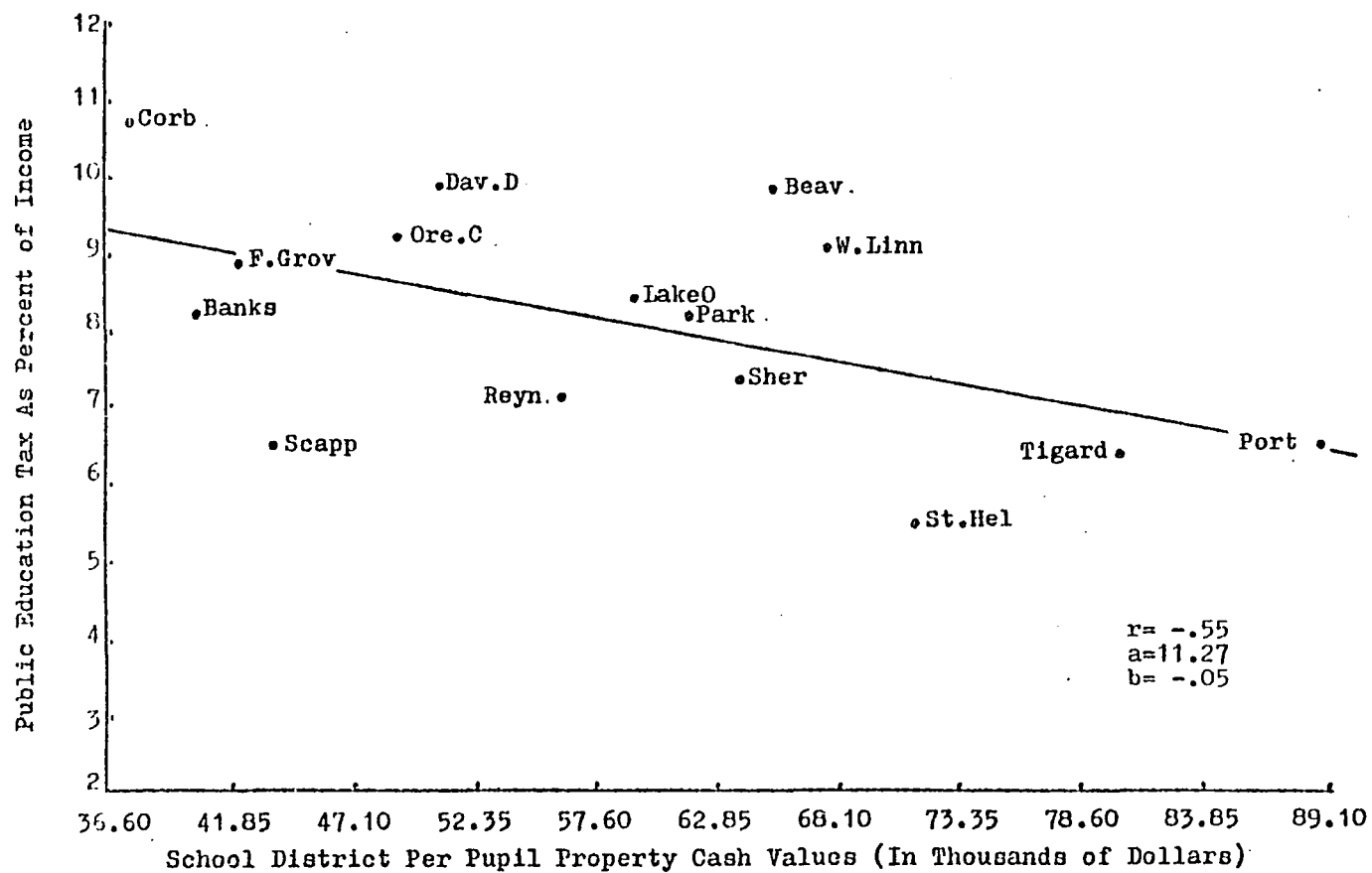


Figure 9. Horizontal tax burden distribution, 1975-1976: scattergram of public education tax as percent of income and per pupil property cash values, "Taxpayer-2."

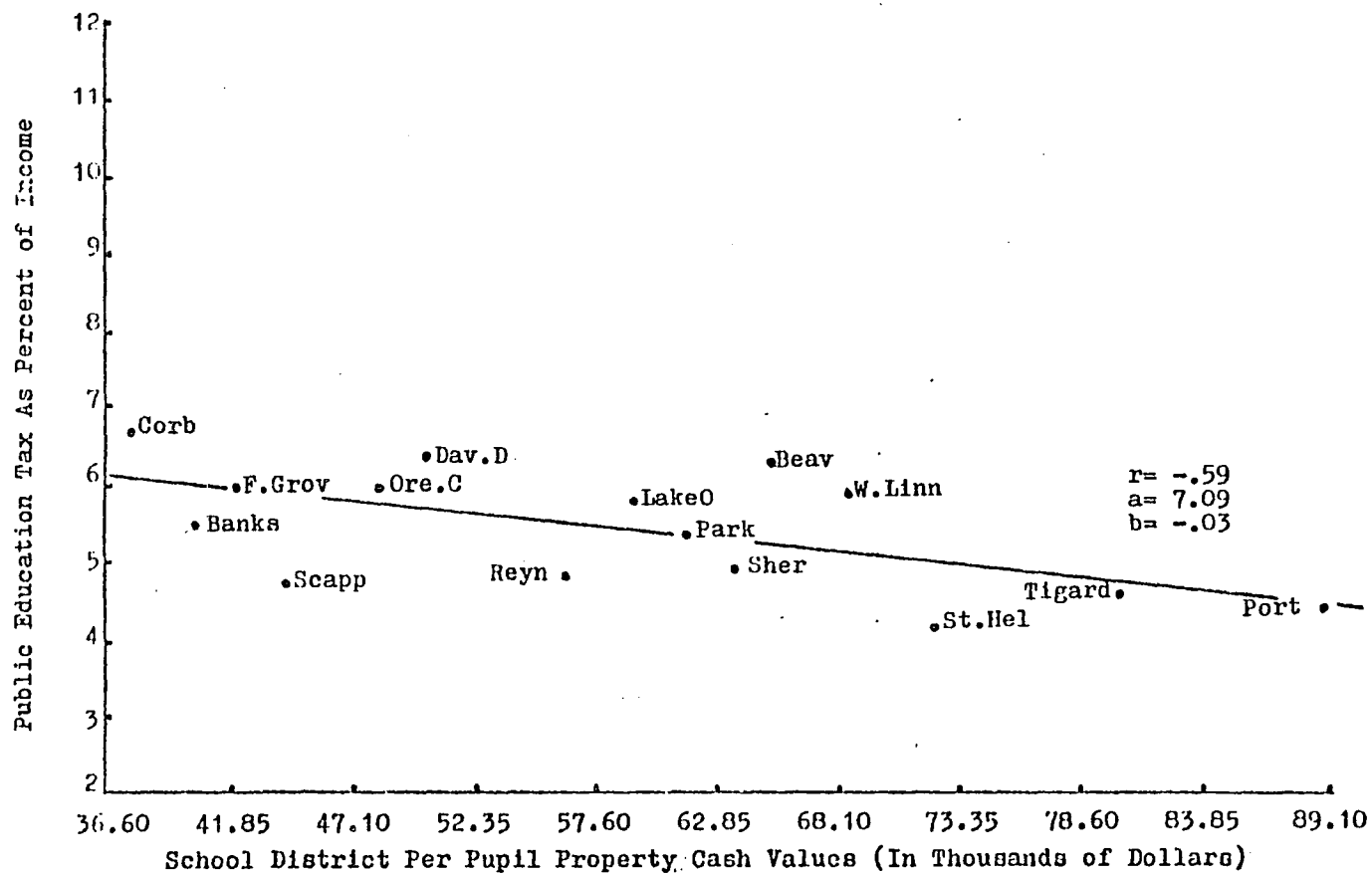


Figure 10. Horizontal tax burden distribution, 1975-1976: scattergram of public education tax as percent of income and per pupil property cash values, "Taxpayer-17."

the St. Helens school district not only paid less in taxes, but also received more in per pupil expenditures compared to his/her counterpart in the Corbett school district.

Analysis of the property status criterion indicates that "taxpayer-2" located in the Corbett school district is equally-circumstanced to "taxpayer-1" in every aspect except that he/she rents a shelter of the same value. Because "taxpayer-2" is a renter, he/she pays more than 50 percent higher public education taxes to finance public schools than the taxpayer, with equal income and family size, located in the same school district, but owning a home. (Figure 11) The cause of this is that the state property tax refund schedule treats renters and owners discriminantly. This study assumes that the property tax of a shelter, paid to various public agencies, is borne by the occupant whether he/she rents or owns. With this assumption, the state property tax refund schedule, which favors home-owners over renters, causes clear horizontal, as well as vertical, tax burden distribution inequities. (Figure 11)

There is a significant inverse relationship between taxpayers' public education tax payments as a percent of income and per pupil property cash values of school districts.  $\bar{r} = -.35$  and  $-.597$  (Figures 9 and 10) Therefore, the existing horizontal tax burden inequities are determined partially by the differences in per pupil property

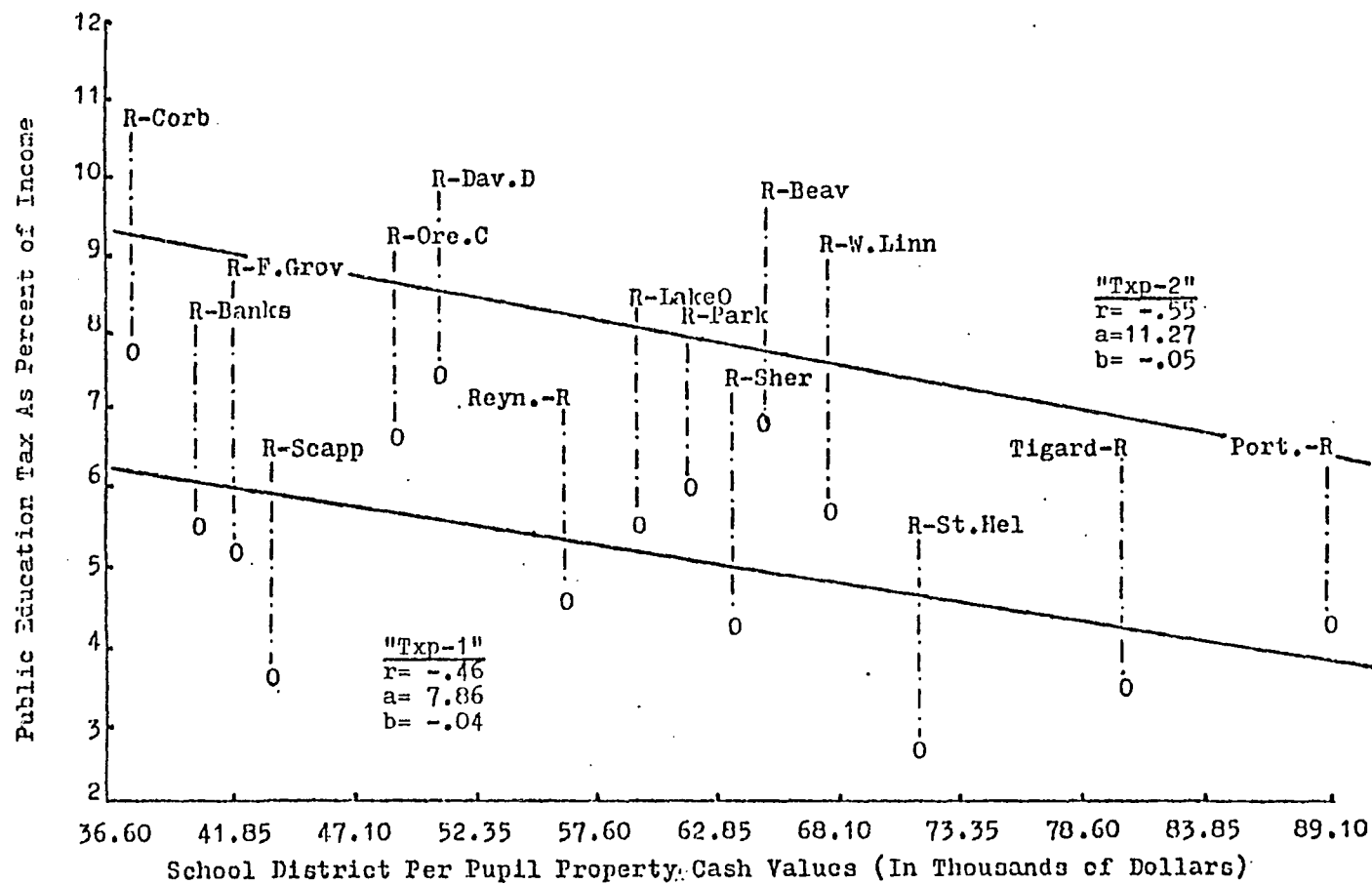


Figure 11. Horizontal tax burden distribution, renter-owner (R-O) discrepancies, 1975-1976: scattergram of public education tax as percent of income and per pupil property cash values, "Taxpayer-1" (Txp-1) and "Taxpayer-2" (Txp-2).



cash values among sample school districts. This is primarily a result of the relatively lower tax rates of the property-rich school districts. Figures 9 and 10 clearly illustrate the variations in tax payments by the two representative taxpayers, and exemplify the existing horizontal tax burden inequities based more on residential location than on the differences in the public education service levels. Both figures illustrate, not only the discrepancies in tax payment among the equally-circumstanced taxpayers, but also the discrepancies in tax burden distribution among taxpayers with different incomes. For example, the level of public education taxes, as a percent of income, paid by "taxpayer-17" (\$12,000.00 income; five-member family; homeowner) residing in Corbett School District, is lower than the public education taxes, as a percent of income, paid by "taxpayer-2" (\$4,000.00 income; five-member family; renter)--6.73 percent and 10.7 percent respectively. (Table X)

Analysis of the variations of public education tax as a percent of income among the low-income taxpayer categories also indicates a relatively wider variation when compared to high-income taxpayer categories. This situation indicates that the magnitude of horizontal tax burden inequity among the equally-circumstanced taxpayers residing in different school districts is inversely related to the taxpayers' level of income. Therefore,

lower taxable-income taxpayers have greater variations in public school tax payments resulting in relatively greater horizontal tax burden inequities. For example, the inter-school district low-to-high variation of public education tax as a percent of income for "taxpayer-2" and "taxpayer-17" was 94 and 58 respectively. This means that the public education tax as a percent of income would increase 94 percent for "taxpayer-2" (\$4,000.00 income; five-member family; renter ) if he/she were to move from the St. Helens school district to the Corbett school district. On the other hand, the same move would cause only a 58 percent increase in public education taxes as a percent of income for "taxpayer-17" (\$12,000.00 income; five-member family; homeowner). (Table X)

To further illustrate the tax burden distribution inequities, hypothetical taxpayer categories were reorganized under six taxpayer income groups. The average public education tax payments as a percent of income were calculated for each sample school district. (Table XI) Regardless of family size and property ownership status of individuals, taxpayers with equal taxable incomes do pay different amounts of taxes to finance public schools. As indicated in Table XI, depending upon the taxpayers' residential locations, public education tax burdens for equal income taxpayers vary considerably. This illustrates the existence of residential location based horizontal

TABLE XI  
TAX BURDEN DISTRIBUTION\*  
1975-1976

School Districts	Public Education Tax As Percent of Income					
	\$4,000 - - -	\$8,000 - - -	\$12,000 - - -	\$18,000 - - -	\$25,000 - - -	\$35,000
Corb.	7.65	7.02	6.34	6.41	7.15	6.97
Dav.D.	7.12	6.42	5.80	5.87	6.56	6.42
Beav.	7.07	6.52	5.91	6.00	6.69	6.54
Ore.C.	6.57	6.19	5.65	5.78	6.44	6.30
Park.	6.02	5.69	5.22	5.36	5.98	5.87
W.Linn	6.15	6.19	5.71	5.88	6.56	6.42
Lake O.	5.87	5.84	5.40	5.57	6.21	6.08
Banks	5.71	5.74	5.31	5.50	6.13	6.01
F.Grov.	5.66	6.03	5.67	5.84	6.51	6.37
Reyn.	4.85	5.06	4.76	4.98	5.56	5.47
Port.	4.57	4.68	4.40	4.63	5.17	5.09
Sher.	4.75	5.35	5.07	5.33	5.95	5.84
Scapp.	4.11	4.87	4.67	4.96	5.54	5.44
Tigard	4.04	4.74	4.55	4.84	5.40	5.31
St.Hel.	3.34	4.27	4.18	4.51	5.04	4.97
Mean	5.57	5.64	5.24	5.43	6.06	5.94
5.59						
Stand.Dev.	2.17	1.00	0.72	0.64	0.78	0.80
1.27						

\*By representative taxpayer income groups

tax burden inequities in financing public schools in the State of Oregon.

In addition to horizontal tax burden distribution inequities, a high degree of vertical tax burden distribution inequity exists in financing public schools. To determine, comparatively, the degree of vertical tax burden distribution, the 45 hypothetical taxpayers' federal income tax payments as a percent of taxable income have been presented in Figure 12 as a relative standard of progressivity of vertical tax burden distribution. The alternative school finance models are compared against the level of federal income tax progressivity.

The vertical tax burden distribution among the Portland, Beaverton and Scappoose school districts has been comparatively analyzed. (Figures 13, 14 and 15) The results indicate that in Portland School District there is no significant relationship between public education tax as a percent of income and the federal income tax-based ranking of the taxpayers. (Figure 13) On the other hand, in the suburban Beaverton School District the relationship between public education tax as a percent of income and the federal income tax-based rankings of the taxpayers is statistically significant and inversely correlated, although not strongly.  $\bar{r} = -.377$  (Figure 14) This may indicate that, in the Beaverton school district, taxation for public education is relatively regressive.

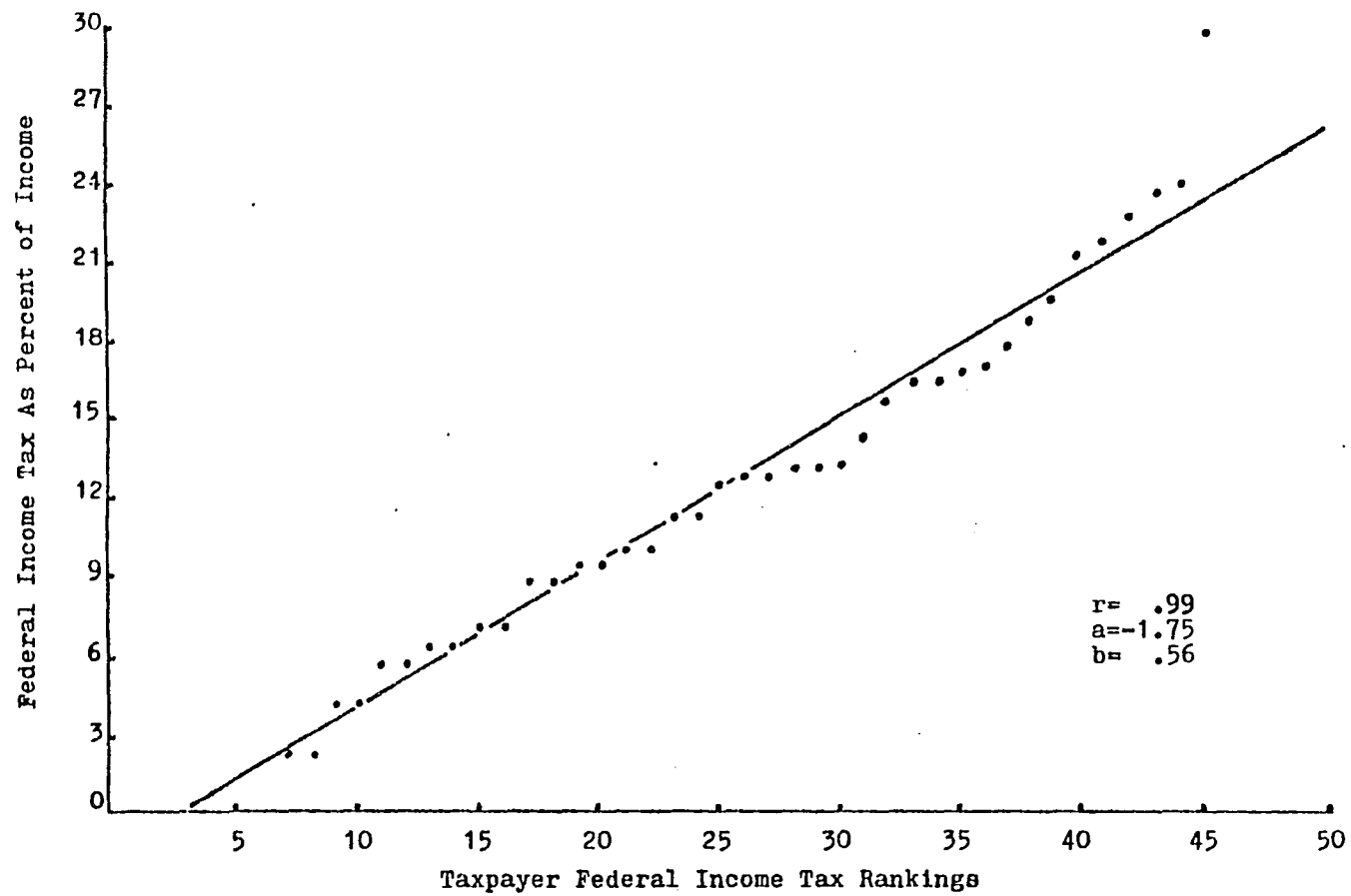


Figure 12. Scattergram of federal income tax payments as percent of income, and rankings of representative taxpayer categories, 1975-1976.

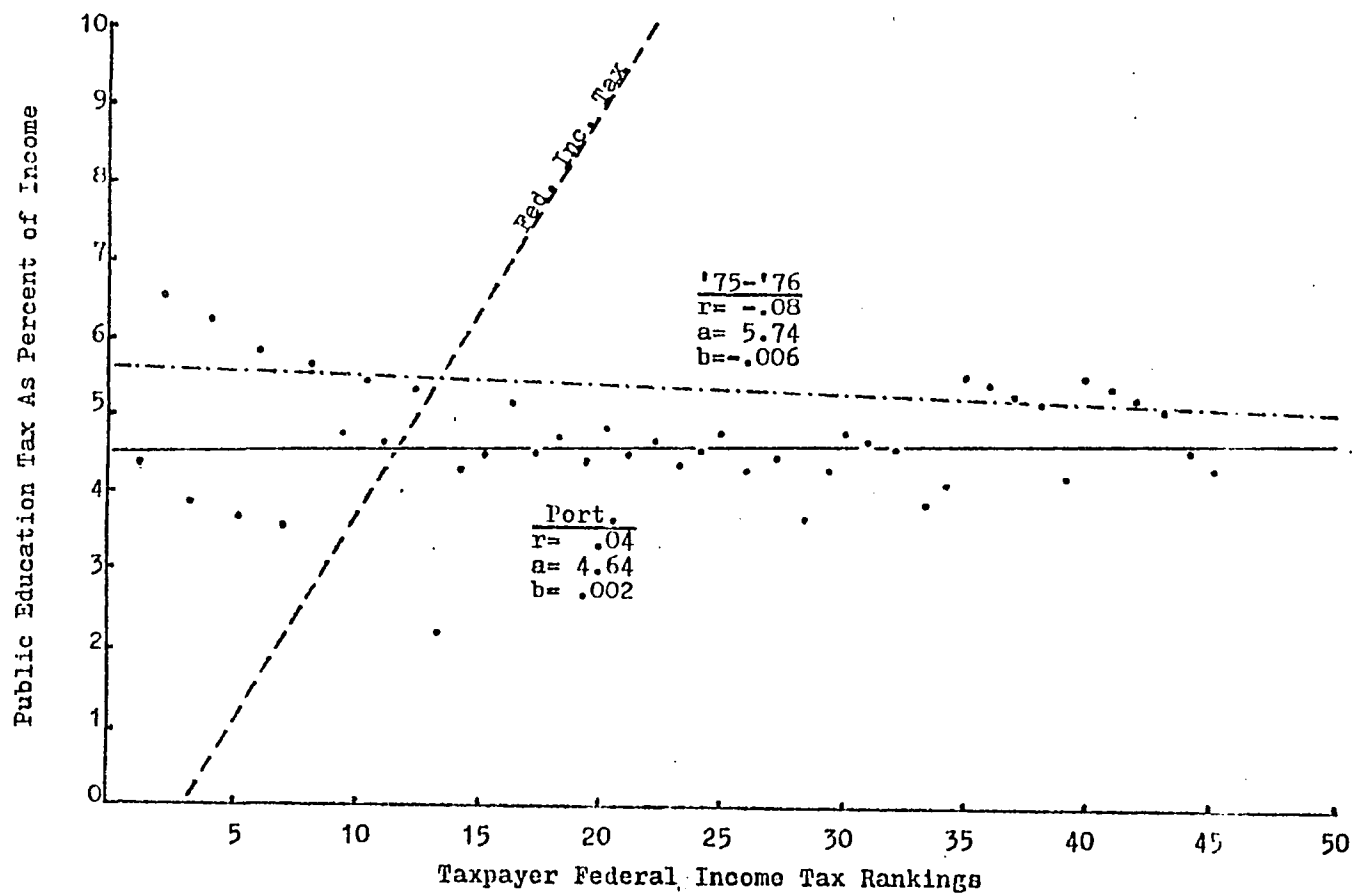


Figure 13. Vertical tax burden distribution, 1975-1976: scattergram of public education tax as percent of income and taxpayer federal income tax rankings, Portland School District.

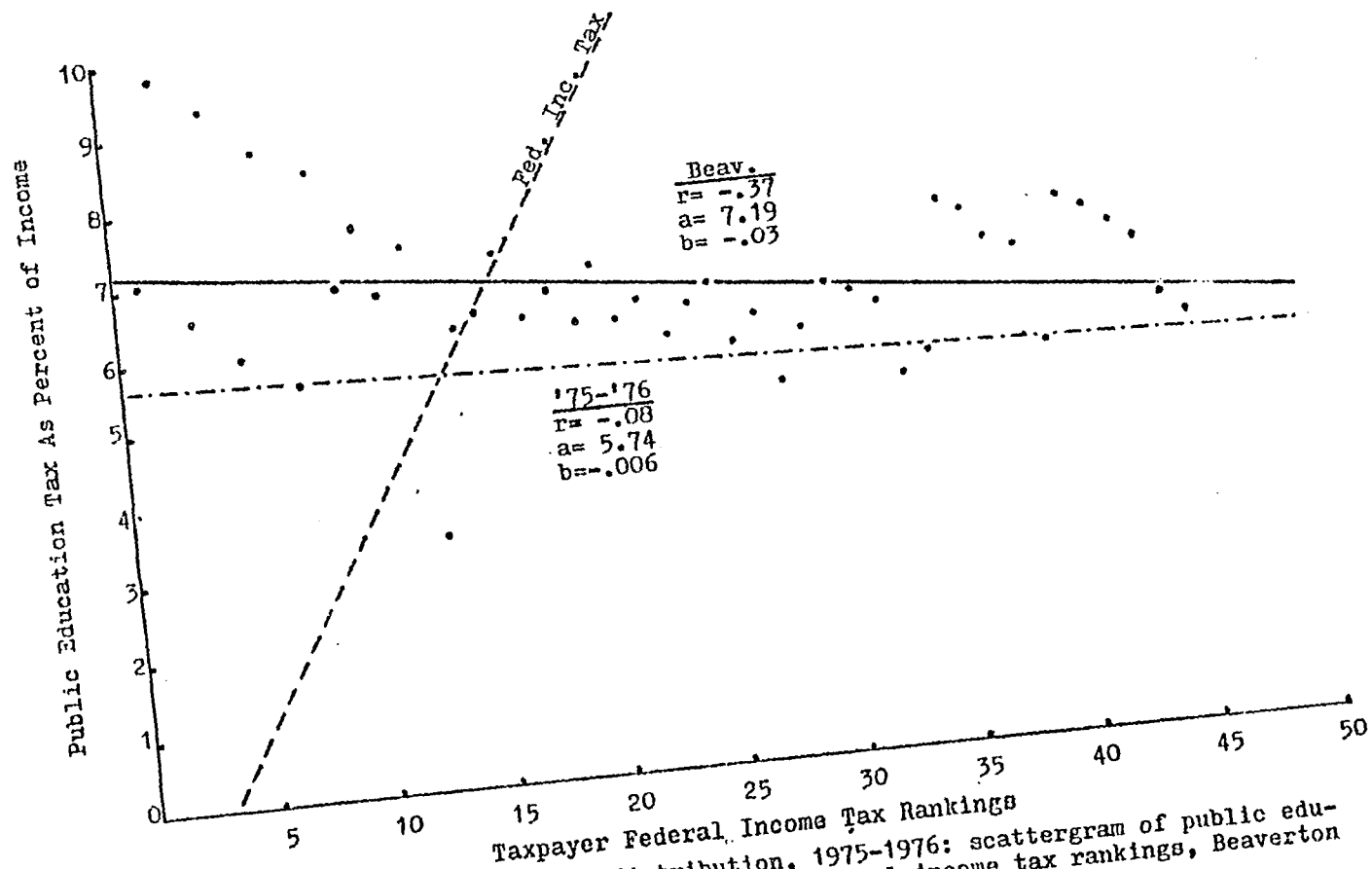


Figure 14. Vertical tax burden distribution, 1975-1976: scattergram of public education tax as percent of income and taxpayer federal income tax rankings, Beaverton School District.

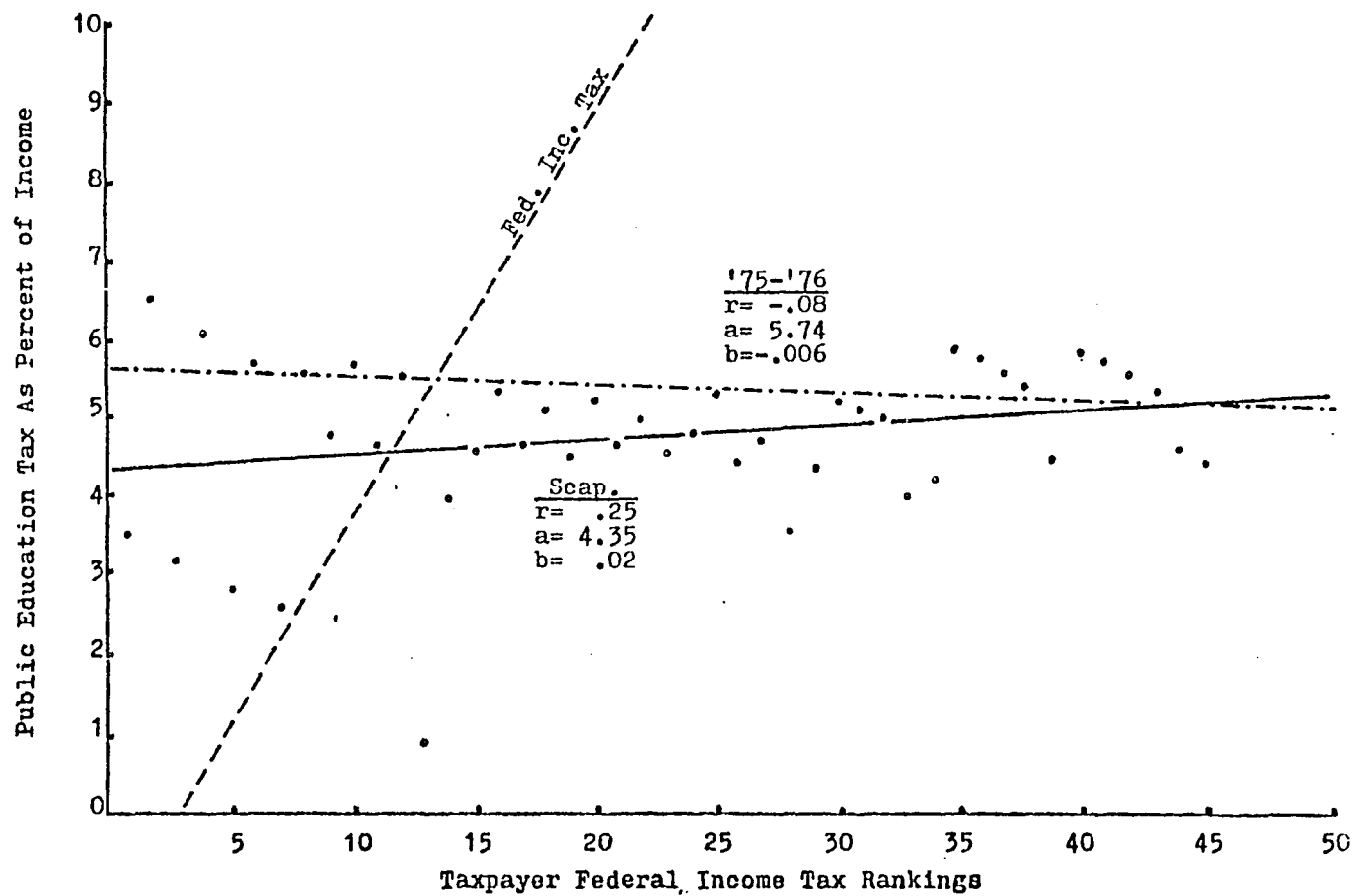


Figure 15. Vertical tax burden distribution, 1975-1976: scattergram of public education tax as percent of income and taxpayer federal income tax rankings, Scappoose School District.



This holds true for most, but not all, of the suburban school districts.

In the Scappoose school district the relationship between the same variables is statistically significant and positively, but weakly, correlated.  $\sqrt{r}=.257$  (Figure 15) However, this correlation does not hold true for most of the rural school districts. Concomitantly, it may be stated that there is no clear (inverse or direct) relationship between the public education tax payment rankings of the taxpayers located in the sample school districts. The occasional appearance of relationships between these two variables results from the differences in per pupil property cash values and their resultant effects on the property tax rates.

The analysis also indicates that the state's property tax refund schedule contributes considerably to the relative regressivity of the local tax structure by disregarding the differences in municipal overburden ratios among school districts. For example, taxpayers receiving equal amounts of state property tax refund would apply different percentages of their refunds to the property taxes paid for public schools, depending upon the municipal overburden ratios of the respective school districts in which they reside. This results in relatively lower proportion of the state property tax refund being applied to the public education tax burden of taxpayers located in predominantly urban, and to some extent, suburban

school districts.

To analyze the overall vertical tax burden distribution situation, the composite scores of the public education tax as a percent of income for the 45 taxpayers has been calculated to indicate a metropolitan area-wide average based on the sample school districts. When the composite (sample) school districts) pattern of public education tax payments as a percent of income (as against the relatively progressive nature of the federal income tax structure), the public education tax payments as a percent of income by the same set of taxpayers indicate, in terms of regressivity-progressivity of continuum, no clear pattern of vertical tax burden distribution. (Figure 16)

While disagreeing with the contention that state and local financing of public schools is regressive, this study clearly recognizes no pattern to support this point of view. Such a vertical tax burden no-pattern distribution results primarily from the two-tier financing of public schools. The regressivity of local property taxation, when combined with a relatively progressive state income tax structure, results in a lessened regressivity in financing public schools.\* This depends first, on the level

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\*This finding supports Donald Phares' conclusion that when the regressivity of the local sector is excluded, it is found that many systems are actually progressive or proportional. (Phares, 1973, p.91)

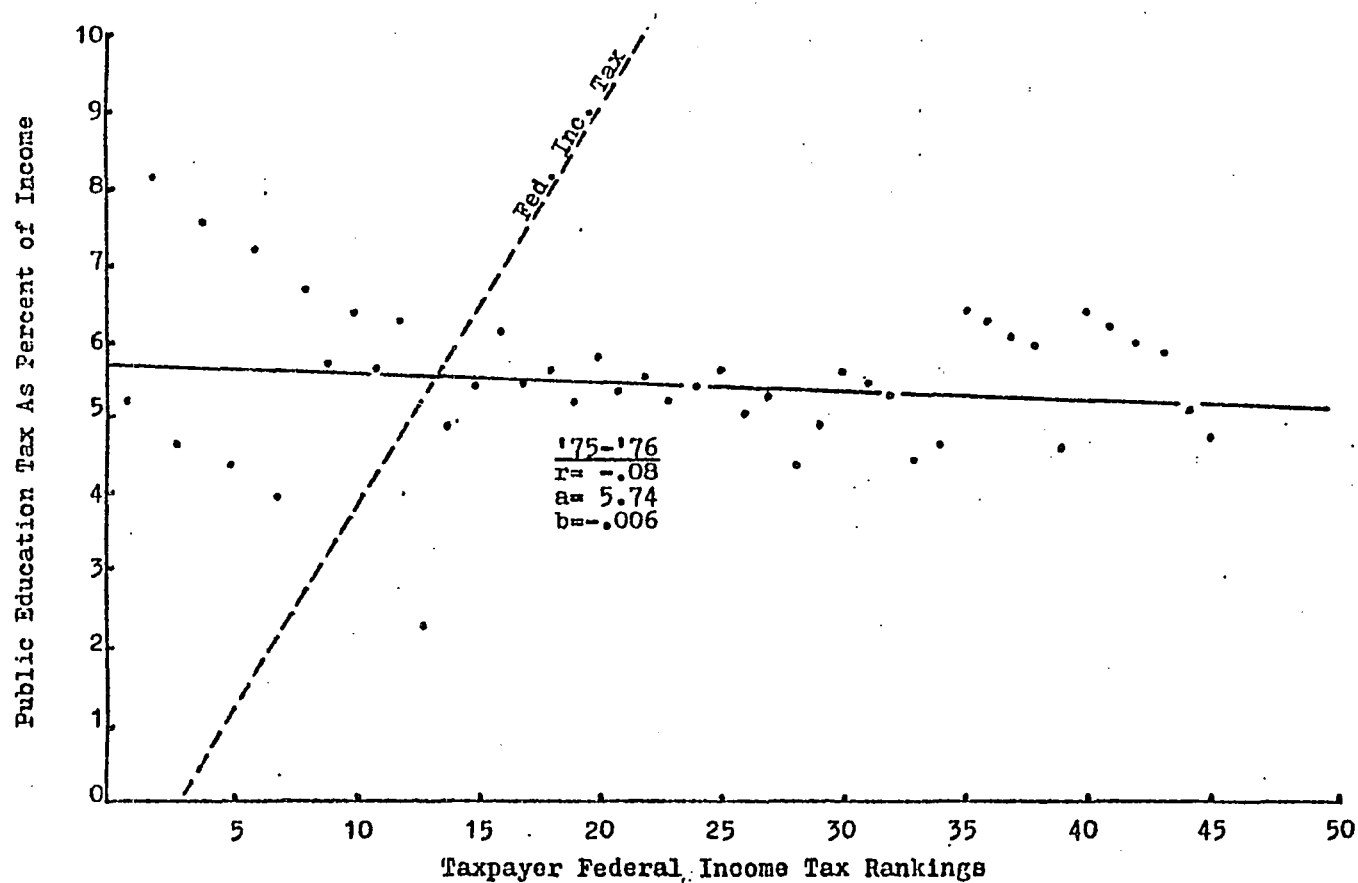


Figure 16. Vertical tax burden distribution, 1975-1976: scattergram of public education tax as percent of income and taxpayer federal income tax rankings, sample school districts' composite average.

of the state's share in financing public schools and, secondly, on the degree of progressivity of the state income tax structure.

This analysis shows that the State of Oregon's share in financing public schools and the relatively progressive state income tax schedules are not sufficient to diminish the regressive impacts of the local property taxes on the individual taxpayers. Presently the Oregon income tax schedule is one of the most progressive among the states. According to Phares' study (1973), Oregon is the fourth most income-tax-progressive state in the union. However, to finance public schools, the State of Oregon contributes less than 30 percent of the total public education cost. This low level of state financing share and ineffective state aid system to equalize differences in school districts' fiscal capacities results in tax burden distribution inequities based on the school district property wealth. This has been a major concern of the Oregon State Legislature for some time. Every legislative session has been occupied by concerns to reform the method of public school finance.

After the failure of the McCall school finance reform plan, the 1973 Legislature initiated search for school finance alternatives. The University of Oregon Center for Educational Policy and Management in 1975 supplied the Oregon Legislature with four school finance alternatives.

These alternatives were structured to reform the existing deficiencies in state aid distribution criteria. (Pierce, et al, 1975) In the following chapter these financing alternatives' effects on school district property tax rates, the level of state aid and tax burden distribution will be analyzed in detail.

### Summary of the Major Findings

This chapter presented the school district profiles, the state aid distribution and the tax burden distribution-related findings of the Oregon public school finance system as operational during the 1975-1976 school year. In accordance with the hypotheses and postulates of this research, and within the parameters and limitations thereupon, an analysis of Oregon's public school finance system produced the following findings:

#### 1. School District Profiles.

a. The property wealth of a school district does not necessarily indicate the level of income wealth of its resident taxpayers.

b. There is a significant inverse relationship between per pupil property cash values and property tax rates of sample school districts.

c. There is a significant positive relationship between per pupil operational expenditures and the per pupil property wealth of sample school districts.

d. There is no statistically significant relationship

between per pupil operational expenditures and property tax rates of sample school districts.

e. There is a strong positive relationship between municipal overburden and the following two variables: population per pupil and pupil/teacher ratios.

f. There is a strong positive relationship between the percent which voted "yes" in school district budget elections and per pupil state aid as a percent of per pupil operational expenditures.

## 2. State Aid Distribution.

a. There is a significant inverse relationship between per pupil property cash values of sample school districts and per pupil state aid received.

b. There is a strong inverse relationship between per pupil property cash values of sample school districts and per pupil equalization grants received.

c. There is no statistically significant relationship between per pupil operational expenditures of sample school districts and per pupil state aid received.

d. There is a strong inverse relationship between per pupil state aid as a percent of per pupil operational expenditures and per pupil property cash values of sample school districts.

## 3. Horizontal Tax Burden Distribution.

a. Under the 1975-1976 school finance scheme, there are considerable variations in the level of tax payments

among the equally-circumstanced taxpayers, resulting in horizontal tax burden inequities.

b. There is no statistically significant relationship between the level of public education tax as a percent of income among equally-circumstanced taxpayers and the level of per pupil operational expenditures of sample school districts.

c. There is a statistically significant, but not strong, inverse relationship between public education tax payments as a percent of income among equally-circumstanced taxpayers and per pupil property cash values of sample school districts.

d. The state property tax refund schedule, which favors home-owners over renters, causes clear horizontal, as well as vertical, tax burden distribution inequities.

#### 4. Vertical Tax Burden Distribution.

a. The state property tax refund schedule contributes considerably to the relative regressivity of the local tax structure by disregarding the differences in municipal overburden ratios among the school districts.

b. There is no definite and significant relationship, inverse or direct, between the public education tax payments as a percent of income and the federal income tax payment rankings of the taxpayers located in the sample school districts. This indicates no clear pattern of vertical tax burden distribution--regressive, proportional or progressive.

## CHAPTER V

### REFORMS WITHIN THE PRESENT SYSTEM\*

This public school finance alternative was initiated by the 1973 Oregon State Legislature and developed by the University of Oregon's Educational Policy and Management staff. Its intention was to reform the present financing system with minimal changes in the level of participation by the state and the local school districts. The study was designed to redistribute state resources so that the local school districts, relative to their tax efforts, would be able to provide equal amounts of resources for public schools. The basic objective of the University of Oregon project was to construct politically feasible proposals by changing the state equalization aid formulas to equalize the fiscal capabilities of the school districts and to eliminate the effects of taxable property wealth. (Pierce, et al, 1975, p.32)

This alternative emphasizes that decisions regarding educational program content are the prerogative of the local school board and the voters in each school district. In developing this alternative, it was the primary assumption of the authors that, "...equalizing the fiscal ability of school districts, however, would insure that local choices reflect differences of educational taste rather than the advantages of wealth." (Pierce, et al,

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\*The major part of this section is based on the data and the analysis provided by the Oregon School Finance Project, Volumes I and II by Pierce, et al, 1975.



1975, p.32)

The project developed four basic options to equalize the cost-benefit differentials among school districts:

(a) Foundation Phase-In Plan; (b) Local Guaranteed Yield Plan; (c) Total Tax Effort Equalization Plan; and (d) Available Wealth Equalization Plan. The four options provided by the University of Oregon study vary according to the extent to which they emphasize different values.

The foundation phase-in plan emphasizes continuity with the present system and a gradual equalization of district expenditures; the local guaranteed yield plan places more emphasis on the value of local choice; the total tax effort equalization plan focuses on the need to equalize the total local tax burden in school districts; and the available wealth equalization plan emphasizes the ratio of school taxes to noneducational taxes. (Pierce, et al, 1975, p.34)

In developing each option, the project used weighted per pupil local property wealth figures and the school district property tax rates as indicators of school district fiscal ability and tax effort. Also, the University of Oregon project built a data bank which contained simulated figures indicating per pupil state aid and property tax rates under each option.

The basic characteristics of each option have been represented by the sample data in Volume II of the project's publication. (Pierce, et al, Volume II, 1975) This representative simulated data has been updated by this research to analyze the public school finance plans under the reform within the present system alternative.

### A. Foundation Phase-In Plan

This option was designed to eliminate the major problems of the presently-operating financing system with least possible changes in the level of participation between the state and local school districts. This could be accomplished by abolishing the state flat grants to school districts completely and re-channeling these state funds to increase the state equalization grants to school districts. To insure that school districts with relatively high per pupil property wealth contribute to the equalization program, at least up to the foundation level, a minimum tax rate of \$12.00 per \$1,000.00 of true cash value would be required of all school districts in the state. If a school district could not raise funds at least equal to foundation level with the minimum tax rate, the difference would be provided by the state equalization grants. On the other hand, if a district with minimum tax rate collects funds above the foundation level, the excess amount above the foundation level would be given to the state for redistribution.

Above the foundation level, a district would be free to use its local wealth to improve the quality of its educational offering. To limit the range of school expenditures, however, there would be a limit on how much a district could tax itself for schools. The permissible additional tax would be limited initially to 50 percent of the required local tax rate and then would be reduced gradually. (Pierce, et al, 1975, pp.35-56)

Pierce cited several problems inherent to this option. First, because of the limits to fiscal expansion, substantial increases in the state foundation level will take time. Second, a constitutional provision is needed before applying the recapture and maximum tax rate requirements. Third, school districts may lose some of their local control. The state government, in order to reduce the inequities based on property wealth differentials, would enforce certain policies to equalize both the tax efforts and the level of expenditures among school districts. (Pierce, et al, 1975, pp.34-37)

#### School District Property Tax Rates

Analysis of the simulated property tax rates among the sample school districts under the foundation phase-in plan indicates that local public school property tax rates would decrease considerably for some of the sample school districts and slightly for others. While the decreases in property tax rates for Corbett, Tigard and Portland School Districts are minimal, they are considerable for the Forest Grove, Banks and Beaverton school districts. St. Helens and Scappoose are the only school districts whose property tax rates would increase. (Figure 17)

Relative to the present financing scheme, the relationship between public school property tax rates and per pupil property cash values under the foundation phase-in plan would become less strongly correlated.  $\sqrt{r} = -.61$

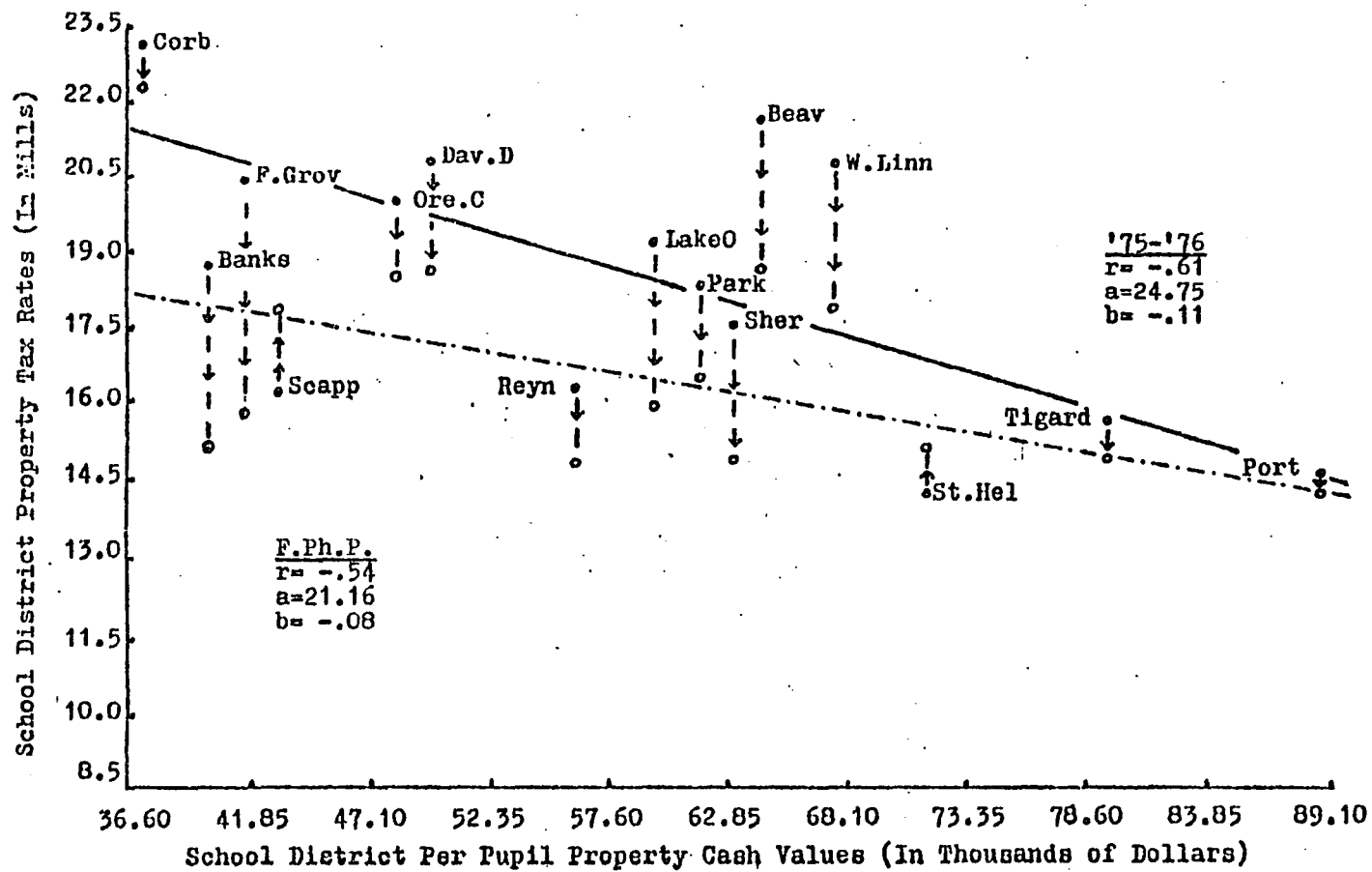


Figure 17. Scattergram of school district property tax rates and per pupil property cash values, Foundation Phase-In Plan (F.Ph.P.)

would decrease to  $= -.547$  (Figure 17) Because of its minimum and maximum tax limitations, and because of the recapture and equalize aspects of state aid distribution, the property tax rates would be determined to a lesser degree by the per pupil property wealth of school districts.

#### State Aid Distribution

Analysis of per pupil state aid distribution to sample school districts under the foundation phase-in plan indicates that per pupil state aid receipts would increase considerably for most, and slightly for some, of the sample school districts, except Portland. (Figure 18) For example, under the foundation phase-in option per pupil state aid to all of the sample districts, except St. Helens, Tigard and Portland, indicate considerable increases. The increase in per pupil state aid for St. Helens and Tigard school districts were comparatively lower, approximately 15 percent and a relative seven percent decrease for the Portland school district. The recapture and redistributive aspects of the foundation phase-in option would make the urban Portland school district relatively worse off while the rest of the sample school districts would be better off.

Under the foundation phase-in plan the inverse linear relationship between the per pupil state aid to school districts and per pupil property cash values of the school districts would become more strongly correlated.

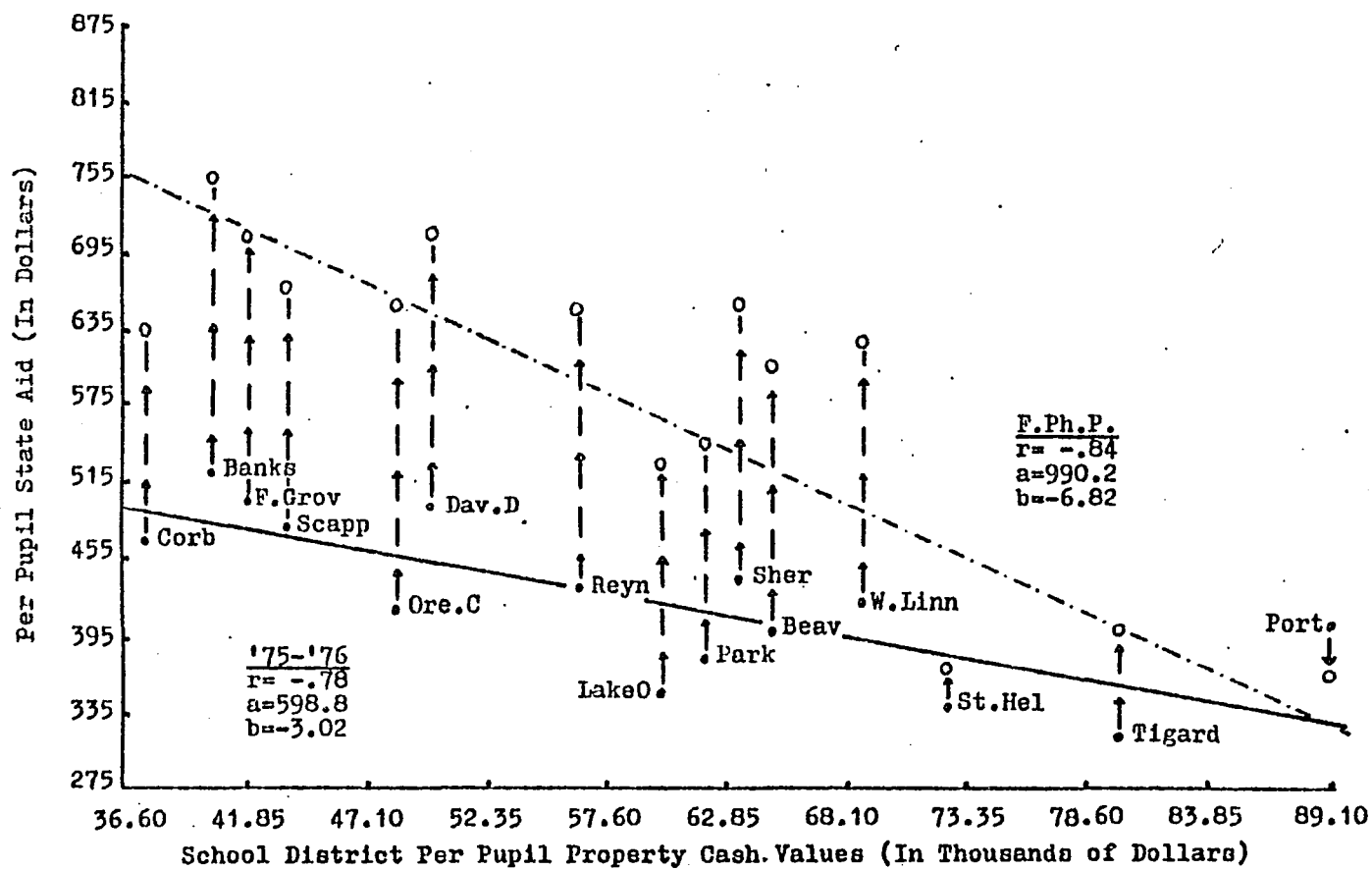


Figure 18. Scattergram of per pupil state aid and per pupil property cash values, Foundation Phase-In Plan (F.Ph.P.)

Concurrently, under this financing option per pupil state aid distribution is determined to a greater extent by the per pupil property cash values of school districts.

$\bar{r} = -.78$  would increase to  $r = -.84$  (Figure 28) This would mean that the more per pupil property wealth a school district has, the less per pupil state aid it would receive. This option was designed to equalize the differences in taxable property wealth capacities among school districts. However, a result of the adoption of this option, which disregards the aggregate income differentials among school districts, would be an increase in the existing state aid distribution inequities. From an income redistribution perspective, this financing option makes the state funds increasingly available to property-poor but income-rich school districts at the expense of income-poor but property-rich school districts.

#### Tax Burden Redistribution

Under the foundation phase-in option, analysis of the horizontal tax redistribution indicates that, relative to the presnet situation, the variation in the level of tax payments among the equally-circumstanced taxpayers would slightly decrease. (Table XII) However, the relative decrease in variations of tax payments among equally-circumstanced taxpayers is not significant to substantiate a movement toward horizontal tax burden distribution equity. (Table XII and Figure 19) For example, as illustrated in

TABLE XII

TAX BURDEN DISTRIBUTION\*--FOUNDATION  
PHASE-IN PLAN (FP)

Public Education Tax As Percent of Income													
School Districts	\$4,000		\$8,000		\$12,000		\$18,000		\$25,000		\$35,000		
	75-76	FP	75-76	FP	75-76	FP	75-76	FP	75-76	FP	75-76	FP	
Corb.	7.65	- 7.25	7.02	- 6.76	6.34	- 6.13	6.41	- 6.22	7.15	- 6.94	6.97	- 6.78	
Dav.D.	7.12	- 6.22	6.42	- 5.83	5.80	- 5.33	5.87	- 5.46	6.56	- 6.09	6.42	- 5.97	
Beav.	7.07	- 5.87	6.52	- 5.72	5.91	- 5.27	6.00	- 5.43	6.69	- 6.06	6.54	- 5.94	
Ore.C.	6.57	- 5.63	6.19	- 5.56	5.65	- 5.15	5.78	- 5.33	6.44	- 5.94	6.30	- 5.83	
Park.	6.02	- 5.26	5.69	- 5.17	5.22	- 4.80	5.36	- 4.99	5.98	- 5.57	5.87	- 5.47	
W.Linn	6.15	- 4.91	6.19	- 5.37	5.71	- 5.06	5.88	- 5.31	6.56	- 5.92	6.42	- 5.81	
Lake O.	5.87	- 4.50	5.84	- 4.91	5.40	- 4.65	5.57	- 4.90	6.21	- 5.47	6.08	- 5.38	
Banks	5.71	- 4.23	5.74	- 4.72	5.31	- 4.50	5.50	- 4.77	6.13	- 5.32	6.01	- 5.24	
F.Grov.	5.66	- 3.60	6.03	- 4.64	5.67	- 4.52	5.84	- 4.86	6.51	- 5.42	6.37	- 5.33	
Reyn.	4.85	- 4.18	5.06	- 4.60	4.76	- 4.38	4.98	- 4.64	5.56	- 5.18	5.47	- 5.10	
Port.	4.57	- 4.48	4.68	- 4.62	4.40	- 4.36	4.63	- 4.59	5.17	- 5.12	5.09	- 5.05	
Sher.	4.75	- 3.46	5.35	- 4.46	5.07	- 4.35	5.33	- 4.69	5.95	- 5.24	5.84	- 5.16	
Scapp.	4.11	- 4.82	4.87	- 5.35	4.67	- 5.05	4.96	- 5.31	5.54	- 5.92	5.44	- 5.81	
Tigard	4.04	- 3.74	4.74	- 4.53	4.55	- 4.38	4.84	- 4.69	5.40	- 5.23	5.31	- 5.15	
St.Hel.	3.34	- 3.73	4.27	- 4.56	4.18	- 4.41	4.51	- 4.72	5.04	- 5.27	4.97	- 5.19	
Mean	5.57	- 4.79	5.64	- 5.12	5.24	- 4.82	5.43	- 5.06	6.06	- 5.65	5.94	- 5.55	
5.59 - 5.08													
Stand.Dev.	2.17	- 1.96	1.00	- 0.84	0.72	0 0.59	0.64	- 0.52	0.78	- 0.65	0.80	- 0.68	
1.27 - 1.14													

\*By representative taxpayer income groups



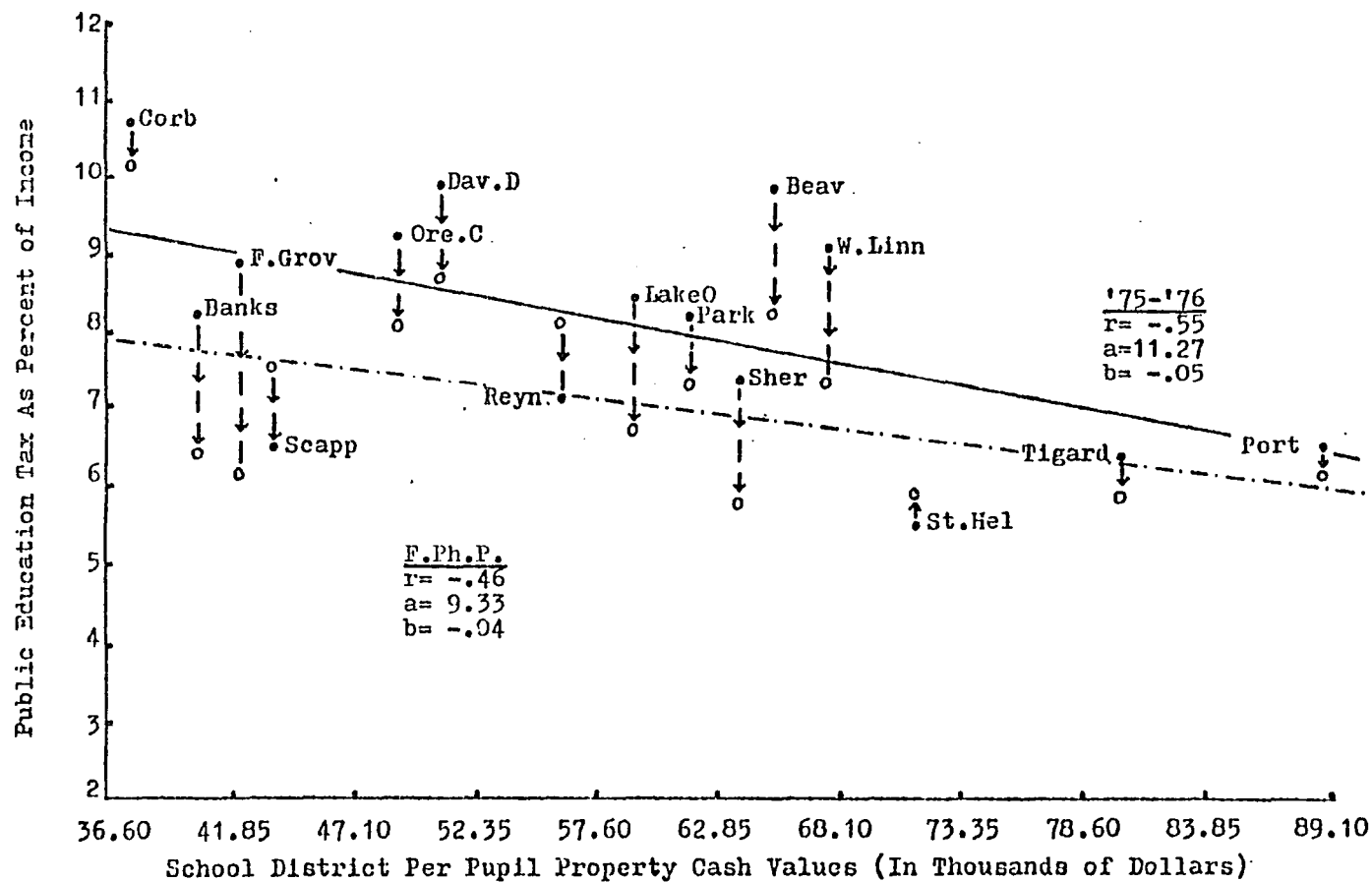


Figure 19. Horizontal tax burden redistribution, Foundation Phase-In Plan (F.Ph.P.): Scattergram of public education tax as percent of income and per pupil property cash values. "Taxpayer-2."

Figure 19, "taxpayer-2" (\$4,000.00 income; five-member family; renter) living in Corbett School District, under the foundation phase-in option would pay 10.2 percent of his/her income to finance public schools as against 10.7 percent under the present financing form. On the other hand, in the lower quadrant, under the foundation phase-in option, the same taxpayer located in the Sherwood school district would pay the lowest percentage of public education taxes (5.79 percent) as compared with the taxpayers located in St. Helens School District under the present financing scheme.(5.5 percent).

Under the foundation phase-in plan the inverse relationship between public education tax payments as percent of income and per pupil property cash values of school districts would become less strongly correlated.  $\bar{r} = -.55$  would decrease to  $r = -.467$  (Figure 19) Concurrently, under this option the horizontal tax burden distribution inequities would be determined to a lesser extent by the per pupil property wealth of school districts.

To determine the degree of vertical tax burden redistribution, the sample school districts' composite pattern of public education tax payments as a percent of income under the foundation phase-in option has been compared to the present vertical tax burden distribution pattern. (Figure 20) Under this financing model the level of public education taxes would decrease for all categories of taxpayers. However, from a vertical tax burden

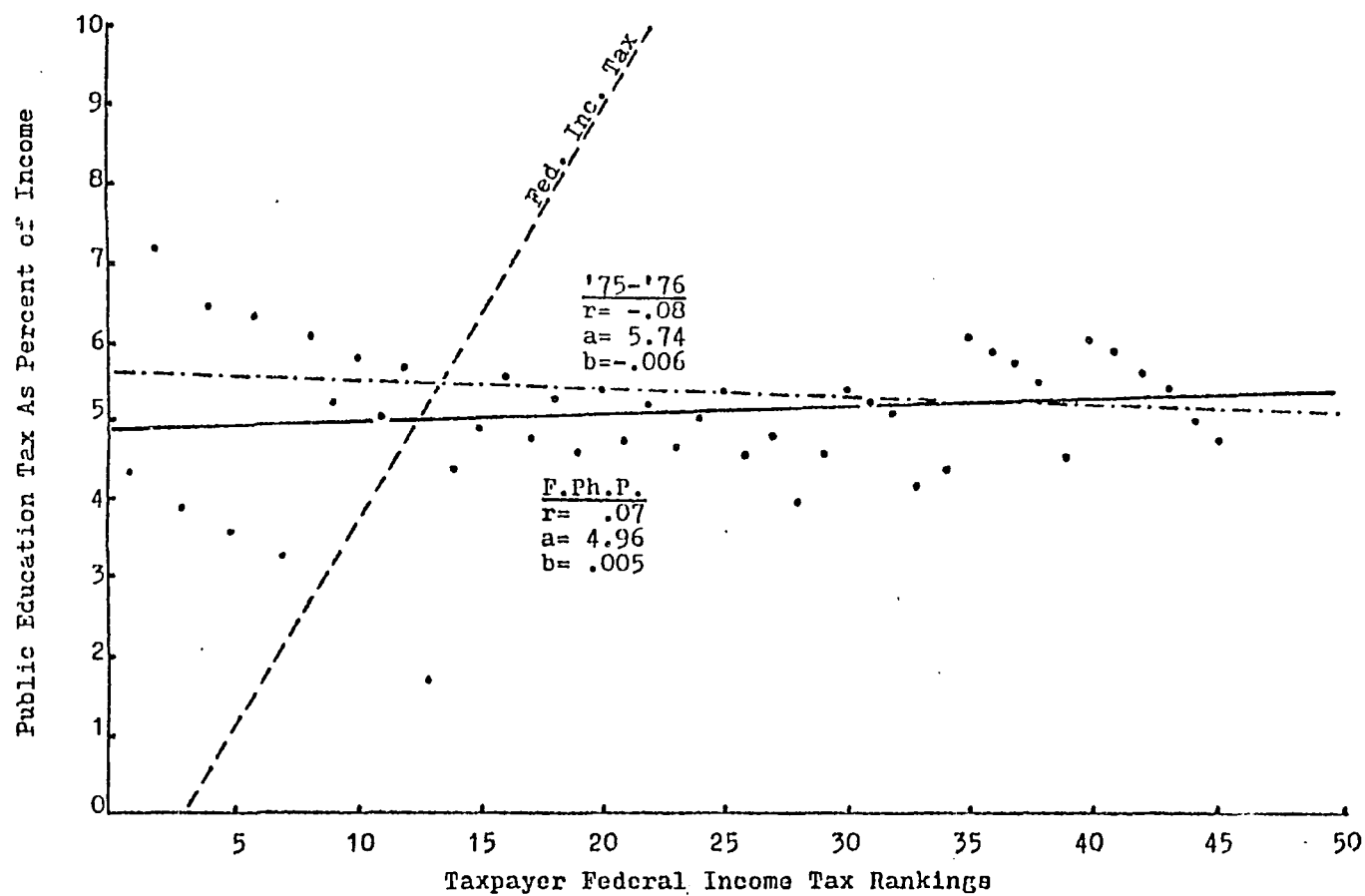


Figure 20. Vertical tax burden redistribution, Foundation Phase-In Plan (F.Ph.P.): scattergram of public education tax as percent of income and taxpayer federal income tax rankings, sample school districts' composite average.

distribution perspective, the change in correlation value from -0.08 to -0.07 is insignificant. Accordingly, analysis of the public education tax payments as a percent of income by the same set of taxpayers under the foundation phase-in plan indicates no significant change in the existing vertical tax burden distribution pattern, which is a no-pattern distribution in terms of regressivity-progressivity continuum. (Figure 20)

#### B. Local Guaranteed Yield Plan

This public school financing proposal is designed on the basis of the state's guarantee that the school districts making the same tax effort would receive relatively equal state support. If a school district's tax effort is not sufficient to fulfill the state standard, the difference will be paid by the state. Under this option the state would design a schedule indicating the required level of school district tax effort to be guaranteed at various levels of receipts per pupil. (Pierce, 1975, p.40) The choice for level of receipts and corresponding level of property tax remains with the school districts. As an option, it may also be possible to require that the school districts contribute their surplus revenues to the state for redistribution.

Under a local guaranteed yield plan such as this, if a district taxes itself at a rate between \$10.00 and \$22.00 but does not have enough taxable property wealth to produce the guaranteed amount, the state makes up the difference. Dis-

tricts can also tax themselves above the \$22.00 maximum guarantee level but there is no equalization above this point. (Pierce, 1975, p.40)

The primary advantage of the local guaranteed yield option would be its ability to equalize the fiscal capacity of local school districts without reducing the local control of public education-related decisions. "The plan simple equalizes the tax price different districts must pay to obtain the same education program per pupil." (Pierce, 1975, p.41)

There are several major problems to this option. One difficulty would be that the state would not know exactly how much state support for schools would cost in any year. Another difficulty is the two criteria (fiscal ability and tax effort) upon which the equalization aid calculations are based. This situation has been heavily criticized by many public school finance specialists on the basis that this measurement system discriminates against the residents of the urban central school districts which are already over-burdened with relatively higher levels of property taxation to finance needed municipal services. Also, it is questionable that the local guaranteed yield option would satisfy the Serrano-based legal requirements that the quality of public education not be determined by local wealth. (Pierce, et al, 1975, p.42)

#### School District Property Tax Rates

Analysis of the simulated tax rates among the sample

school districts under the local guaranteed yield plan indicates that local public education property tax rates would decrease considerably for all of the school districts except Scappoose and St. Helens. Under this public school financing option these two school districts' tax rates would increase slightly. Three school districts (Banks, Forest Grove and Oregon City) show substantial decreases in property tax rates. (Figure 21)

Under the local guaranteed yield option the inverse relationship between the public school property tax rates and the per pupil property cash values would become statistically insignificant at the .05 level. Because of its emphasis on local tax effort rather than local property wealth, the tax rates of sample school districts would not be determined by per pupil property cash values.

#### State Aid Distribution

Analysis of the per pupil state aid distribution to sample school districts under the local guaranteed yield plan indicates that per pupil state aid receipts would increase considerably for most, and slightly for some, of the sample school districts, except Portland. (Figure 22) For example, under the local guaranteed yield option per pupil state aid to all of the sample districts, except three high per pupil property cash value school districts (St. Helens, Tigard and Portland), would increase considerably. The increase in per pupil state aid for St. Helens

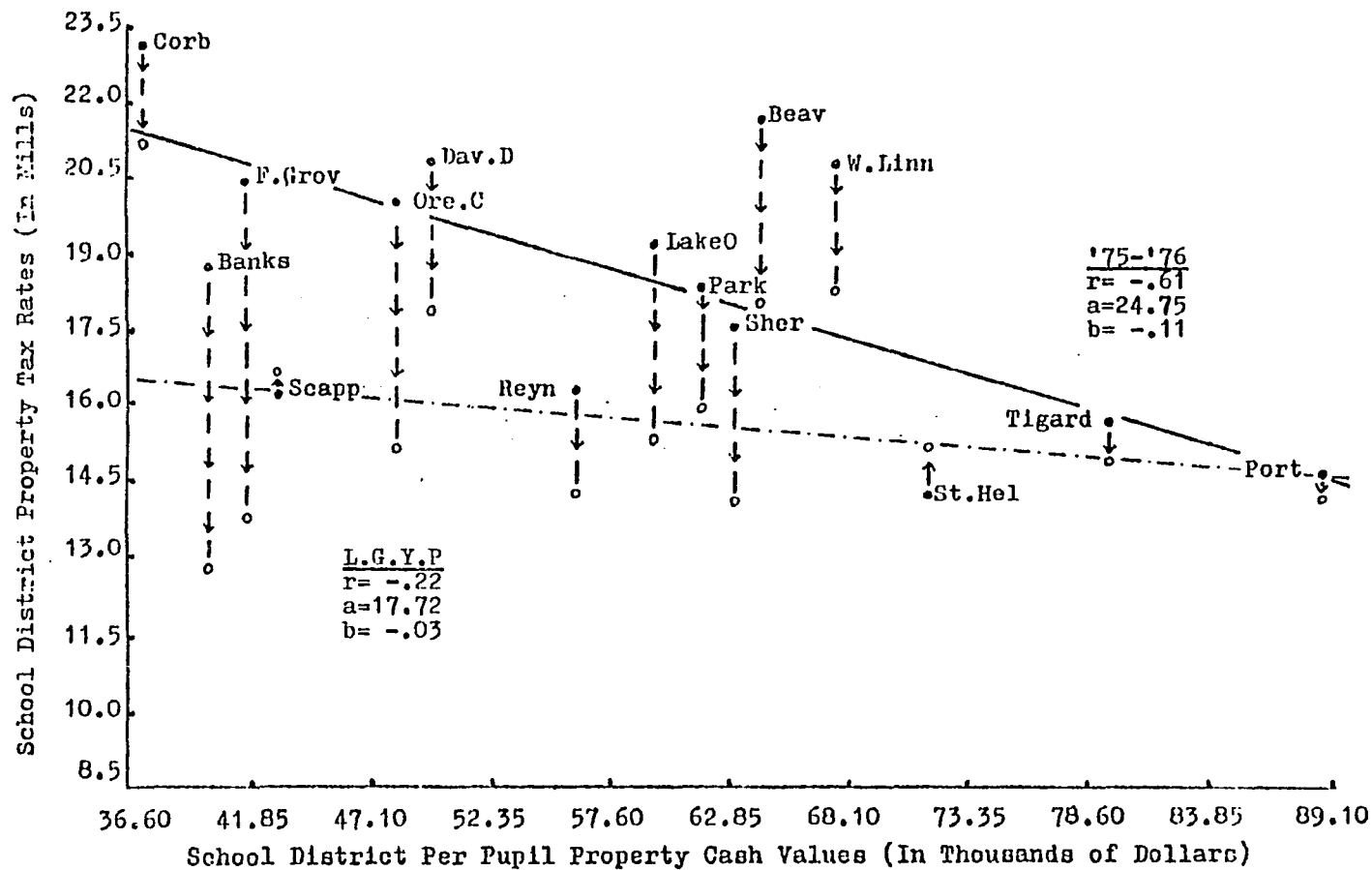


Figure 21. Scattergram of school district property tax rates and per pupil property cash values, Local Guaranteed Yield Plan (L.G.Y.P.).

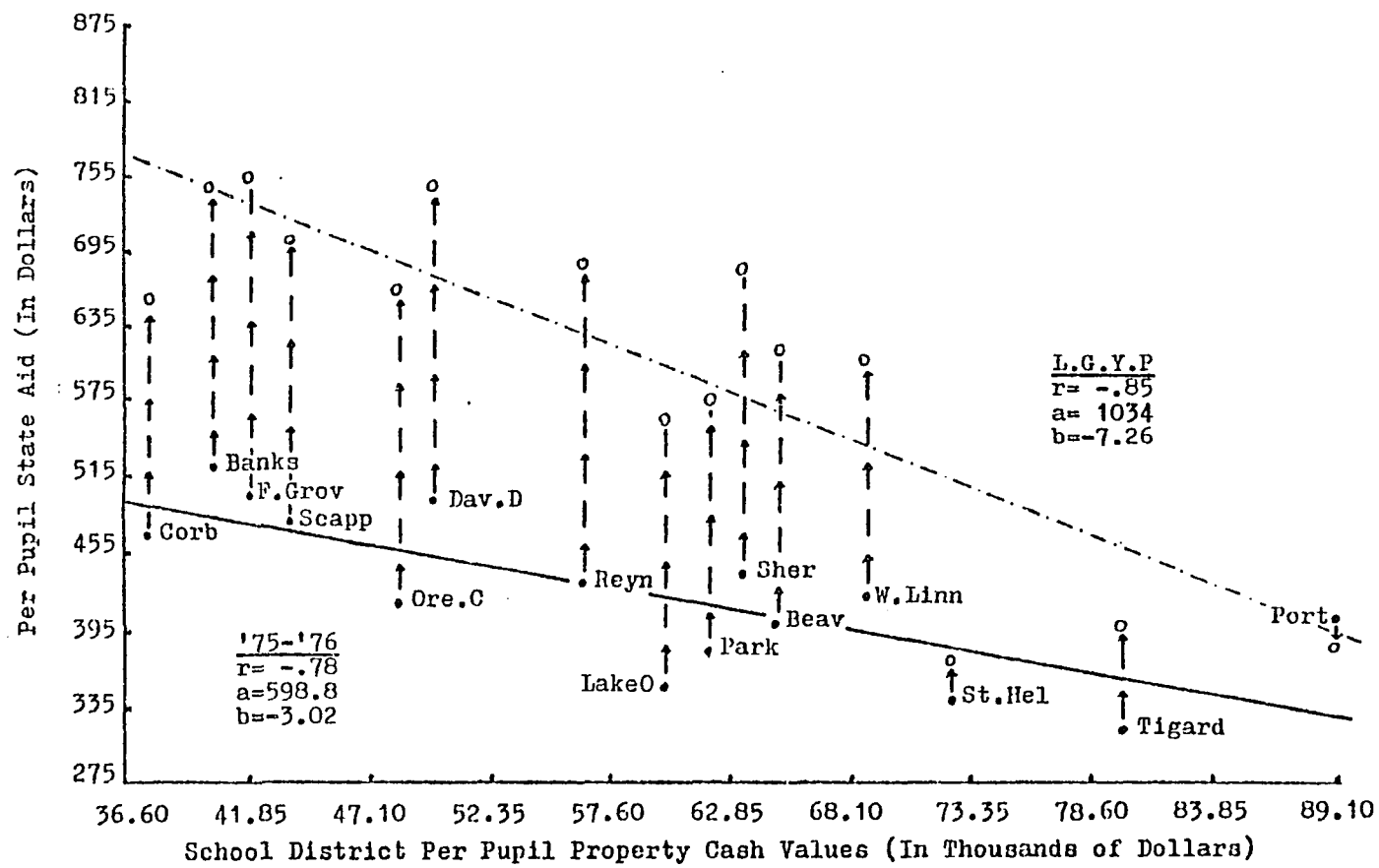


Figure 22. Scattergram of per pupil state aid and per pupil property cash values, Local Guaranteed Yield Plan (L.G.Y.P.).



and Tigard, relative to other school districts, would be considerably less. For the Portland school district, relative to the present situation, per pupil state aid received would be approximately four percent lower. (Figure 22) The state aid distribution criterion of the local guaranteed yield plan would make the Portland school district relatively worse off while the rest of the sample school districts would be better off.

Under the local guaranteed yield plan the inverse linear relationship between the per pupil state aid to school districts and per pupil property cash values of the school districts would become more strongly correlated.  $[r = -.78]$  would increase to  $r = 0.85$  (Figure 22) Therefore, under this financing option per pupil state aid distribution would be determined to a greater extent by the per pupil property cash values of school districts. The local guaranteed yield option was designed to equalize the taxable property wealth capacities among school districts. Nevertheless, the implementation of this financing option, which disregards the aggregate income differentials among school districts, would be an increase in the existing state aid distribution inequities.

#### Tax Burden Redistribution

Analysis of the horizontal tax redistribution under the local guaranteed yield option indicates that, relative to the present financing scheme, the degree of variations

in the levels of tax payments among the equally-circumstanced taxpayers would slightly decrease. (Table XIII) The relative decrease in the variations in public education tax payments among equally-circumstanced taxpayers under this financing option is not significant to substantiate movement toward horizontal tax burden distribution equity. (Table XIII and Figure 23) For example, Figure 12 illustrates that "taxpayer-2" (\$4,000.00 income; five-member family; renter) living in Corbett School District, under the local guaranteed yield option would pay 9.5 percent of his/her income to finance public schools as against 10.7 percent under the existing school finance system. On the other hand, in the lower quadrant the same taxpayer located in Forest Grove School District would pay only five percent of his/her income for public school taxes. Relative to the present financing form, the rural school district taxpayers would become better off under the local guaranteed yield option. Under the present financing system the taxpayers in Portland, Tigard and St. Helens School Districts would be paying the lowest percentages, relatively. Under the local guaranteed yield plan taxpayers in three rural school districts (Forest Grove, Banks and Sherwood) would pay the relatively lowest percentages. (Figure 23)

Under the local guaranteed yield plan the inverse relationship between public education tax payments as percent of income and per pupil property cash values of

TABLE XIII

TAX BURDEN DISTRIBUTION\*--LOCAL  
GUARANTEED YIELD PLAN (L.G.Y.)

Public Education Tax As Percent of Income												
School Districts	\$4,000		\$8,000		\$12,000		\$18,000		\$25,000		\$35,000	
	75-76	LGY	75-76	LGY	75-76	LGY	75-76	LGY	75-76	LGY	75-76	LGY
Corb.	7.65	- 6.67	7.02	- 6.38	6.34	- 5.83	6.41	- 5.96	7.15	- 6.65	6.97	- 6.50
Dav.D.	7.12	- 5.81	6.42	- 5.55	5.80	- 5.10	5.87	- 5.26	6.56	- 5.87	6.42	- 5.76
Beav.	7.07	- 5.77	6.52	- 5.65	5.91	- 5.21	6.00	- 5.38	6.69	- 6.01	6.54	- 5.89
Ore.C.	6.57	- 4.46	6.19	- 4.76	5.65	- 4.50	5.78	- 4.74	6.44	- 5.30	6.30	- 5.21
Park.	6.02	- 5.07	5.69	- 5.04	5.22	- 4.69	5.36	- 4.89	5.98	- 5.46	5.87	- 5.37
W.Linn	6.15	- 5.12	6.19	- 5.50	5.71	- 5.17	5.88	- 5.40	6.56	- 6.03	6.42	- 5.91
Lake O.	5.87	- 4.29	5.84	- 4.76	5.40	- 4.53	5.57	- 4.79	6.21	- 5.35	6.08	- 5.26
Banks	5.71	- 3.29	5.74	- 4.05	5.31	- 3.96	5.50	- 4.27	6.13	- 4.78	6.01	- 4.72
F.Grov.	5.66	- 2.86	6.03	- 4.10	5.67	- 4.09	5.84	- 4.47	6.51	- 4.99	6.37	- 4.92
Reyn.	4.85	- 4.02	5.06	- 4.49	4.76	- 4.29	4.98	- 4.56	5.56	- 5.09	5.47	- 5.02
Port.	4.57	- 4.42	4.68	- 4.58	4.40	- 4.32	4.63	- 4.56	5.17	- 5.09	5.09	- 5.01
Sher.	4.75	- 3.13	5.35	- 4.22	5.07	- 4.16	5.33	- 4.52	5.95	- 5.04	5.84	- 4.97
Scapp.	4.11	- 4.32	4.87	- 5.00	4.67	- 4.78	4.96	- 5.06	5.54	- 5.65	5.44	- 5.55
Tigard	4.04	- 3.65	4.74	- 4.47	4.55	- 4.33	4.84	- 4.64	5.40	- 5.18	5.31	- 5.10
St.Hel.	3.34	- 3.77	4.27	- 4.59	4.18	- 4.44	4.51	- 4.74	5.04	- 5.30	4.97	- 5.21
Mean	5.57	- 4.44	5.64	- 4.88	5.24	- 4.63	5.43	- 4.88	6.06	- 5.45	5.94	- 5.36
5.59 - 4.84												
Stand.Dev.	2.17	- 1.91	1.00	- 0.83	0.72	0 0.58	0.64	- 0.52	0.78	- 0.64	0.80	- 0.67
1.27 - 1.13												

\*By representative taxpayer income groups

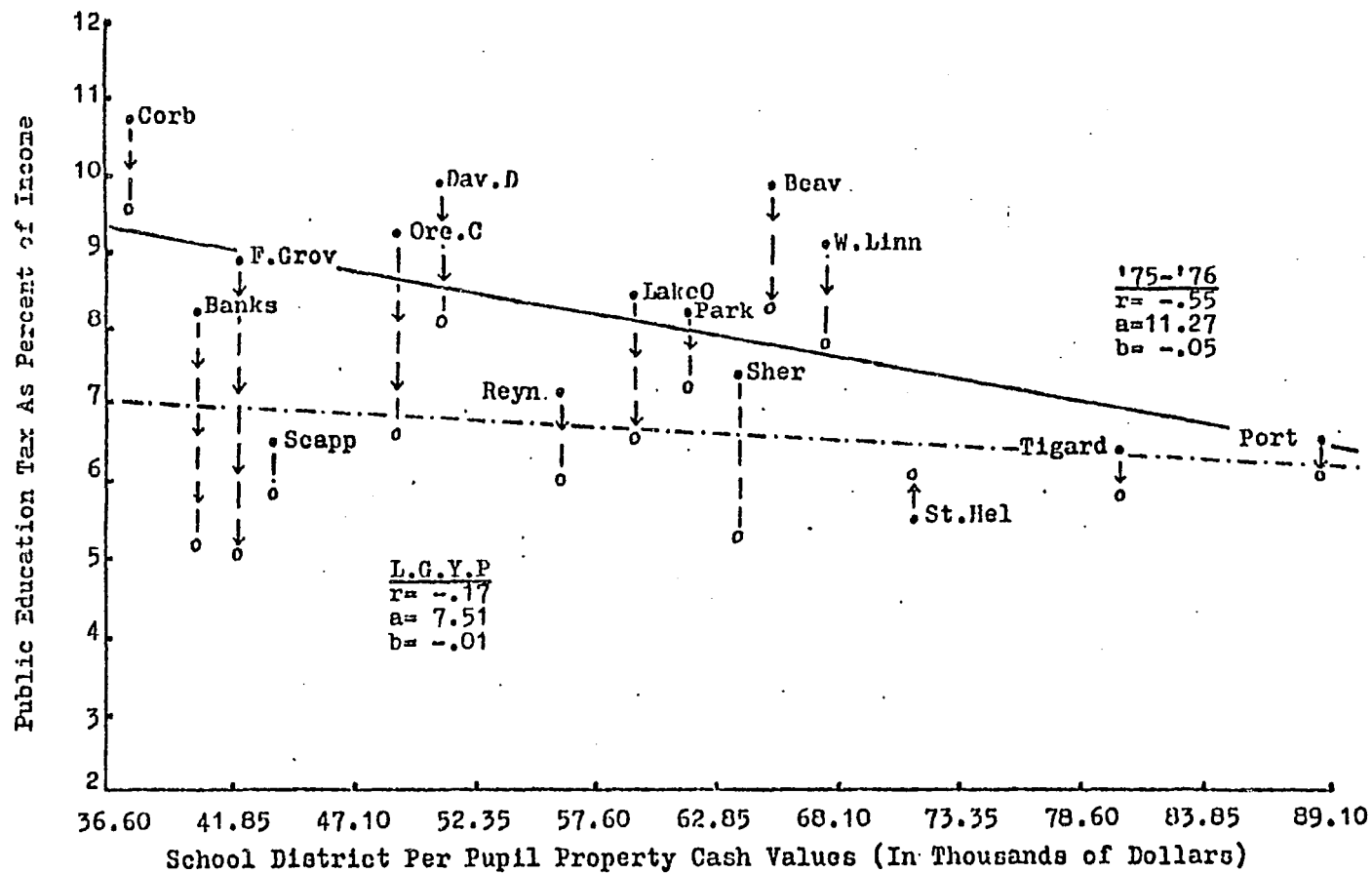


Figure 23. Horizontal tax burden redistribution, Local Guaranteed Yield Plan (L.G.Y.P.): scattergram of public education tax as percent of income and per pupil property cash values, "Taxpayer-2."

school districts would become statistically insignificant. Concurrently, under the local guaranteed yield plan the horizontal tax burden inequities would not be determined by per pupil property wealth of school districts. (Figure 23)

To determine the degree of vertical tax burden redistribution, the sample school districts' composite pattern of public education tax payments as a percent of income under the local guaranteed yield option has been compared to the present vertical tax burden distribution pattern. (Figure 24) Under this financing model the level of public education taxes would be reduced for all categories of taxpayers. From a vertical tax burden redistribution perspective, the change in correlation value, from  $-0.08$  to  $+0.15$ , is insignificant. Accordingly, analysis of the public education tax payments as a percent of income by the same set of taxpayers under the local guaranteed yield plan indicates no significant change in the existing vertical tax burden distribution pattern, which is a no-pattern distribution in terms of regressivity-progressivity continuum. (Figure 24)

### C. Total Tax Effort Equalization Plan

It is evident that the provision of educational services is relatively more costly in urban central areas than in the surrounding areas. Comparisons of per pupil

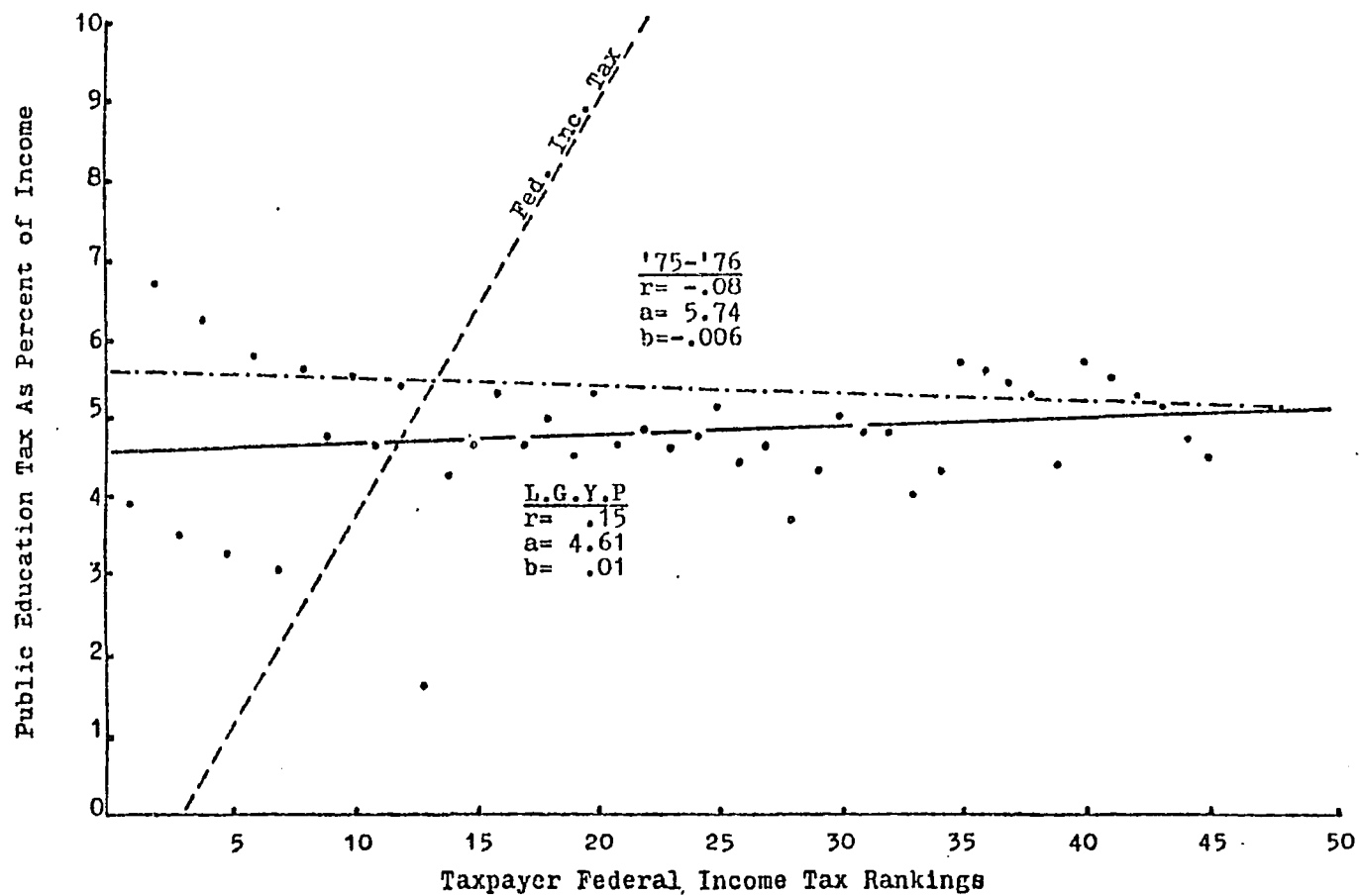


Figure 24. Vertical tax burden redistribution, Local Guaranteed Yield Plan (L.G.Y.P.): scattergram of public education tax as percent of income and taxpayer federal income tax rankings, sample school districts' composite average.

expenditures hide the fact the higher cost of land, construction, personnel salaries and general maintenance means that relatively less educational services, on a per-dollar basis, are offered in cities than elsewhere. (Pierce, et al, 1975, p.45)

The number of school-age children in need of compensatory and special education is relatively greater in the urban central as compared to suburban areas. In addition to these two factors, the existence of relatively higher per capita local noneducational public expenditures (municipal overburden) leaves relatively less tax dollars available for public schools. The total tax effort equalization financing option was designed in response to these problems inherent to urban school districts in order to change the state aid distribution policies to favor the urban educational systems.

Under this plan the local guaranteed yield schedule runs from \$5.00 to \$35.00. If a district has a total tax rate between \$5.00 and \$35.00 but does not have enough taxable property wealth to produce the guaranteed amount, the state makes up the difference between the guarantee and a percent of TCV multiplied by the total tax rate.\* Districts can also have total tax rates above the \$35.00 maximum guarantee, but there is no equalization above this point. (Pierce, et al, 1975, pp.45-46)

In general, the total tax effort equalization plan appears to be a different version of the local guaranteed

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\*School property taxes on the average are roughly 60 percent of total property taxes. (Pierce, et al, 1975, p.45)

yield plan. The basic difference is that the total tax effort equalization plan realigns the measure of local tax effort by means of equalization of the entire local tax effort, rather than only the school district tax effort. Under this financing option the tax rate for each school district is computed and used as the basis to establish corresponding schedules to distribute state equalization funds. One primary problem with this plan is that it may encourage municipal governments to raise their level of expenditures. This may result in gross levels of economic inefficiencies in local governmental operations. (Pierce, et al, 1975, p.47)

#### School District Property Tax Rates

Analysis of the simulated tax rates among the sample school districts under the total tax effort equalization plan indicates that local public education property tax rates would decrease considerably for most, and slightly for some, of the sample school districts, except Portland. (Portland School District's tax rate would increase from 14.59 to 15.12.)

The tax rate distribution pattern in Figure 25 indicates a change in the direction of tax burden distribution. Under the present financing form, the relationship between the school district property tax rates and per pupil property values are negatively correlated. [ $\bar{r} = -.61$ ] (Figure 2) Under the total tax effort equalization plan this



relationship, while not statistically significant, becomes positively correlated.  $[r = +.35]$  (Figure 25) Apparently this financing model induces a definite change in the tax burden distribution. Contrary to the present, under this financing model school districts with relatively more property wealth would have relatively higher public school property tax rates. Concurrently this would result in a higher tax burden for urban school districts in the Portland metropolitan area.

#### State Aid Distribution

Analysis of the per pupil state aid to school districts indicates that, relative to the present financing form, under the total tax effort equalization plan the level of state aid would increase substantially for all of the sample school districts except Portland. Portland School District, under this financing model, would receive \$303.00 per pupil state aid as compared with \$401.00 with the present financing form. (Figure 26) Evidently the state aid distribution criterion of the total tax effort equalization plan would make the Portland school district relatively worse off while the rest of the sample school districts would be considerably better off.

Under the total tax effort equalization plan the inverse linear relationship between the per pupil state aid to school districts and per pupil property cash values of the school districts would become more strongly correlated.

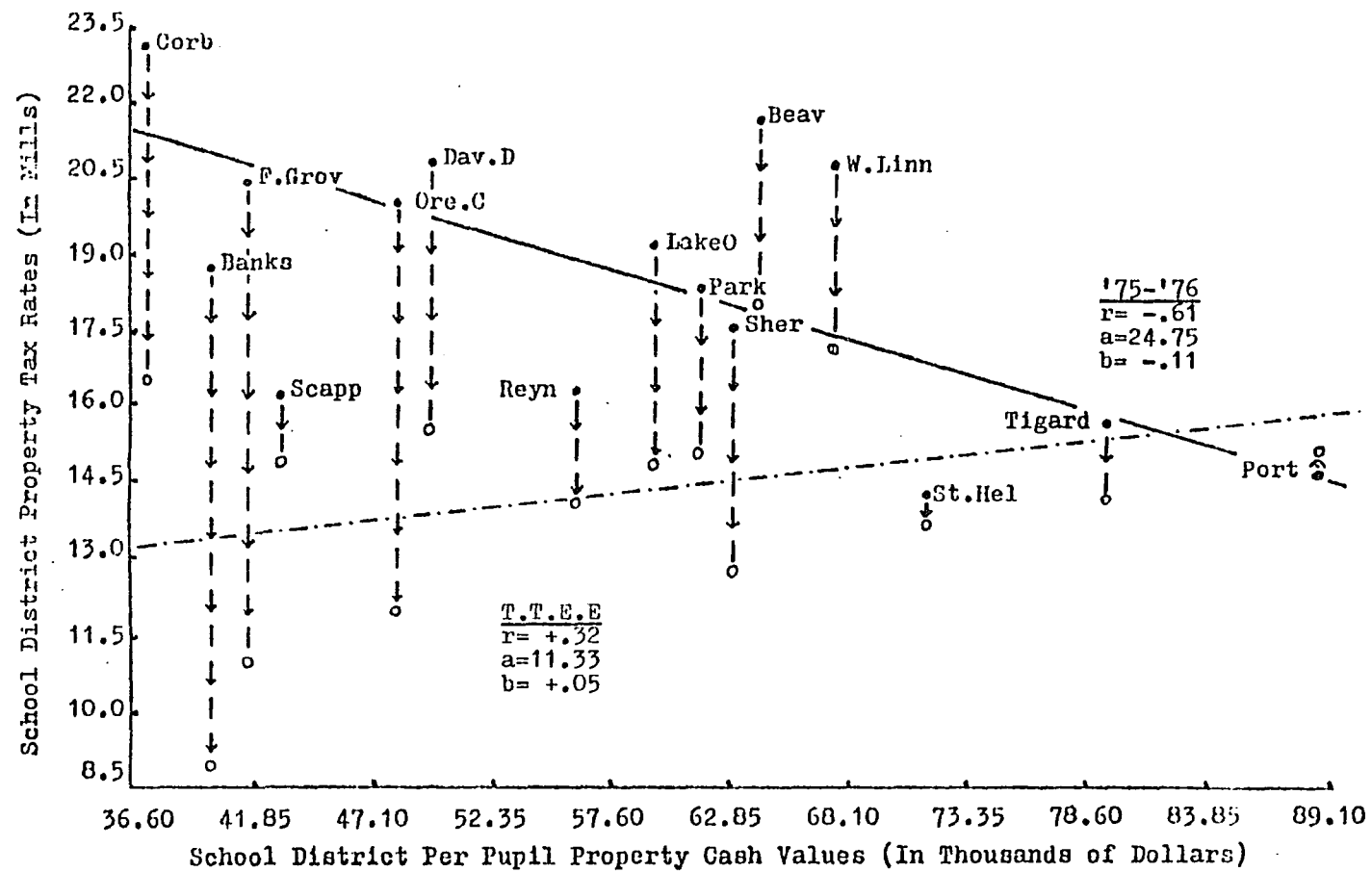


Figure 25. Scattergram of school district property tax rates and per pupil property cash values, Total Tax Effort Equalization Plan (T.T.E.E.).

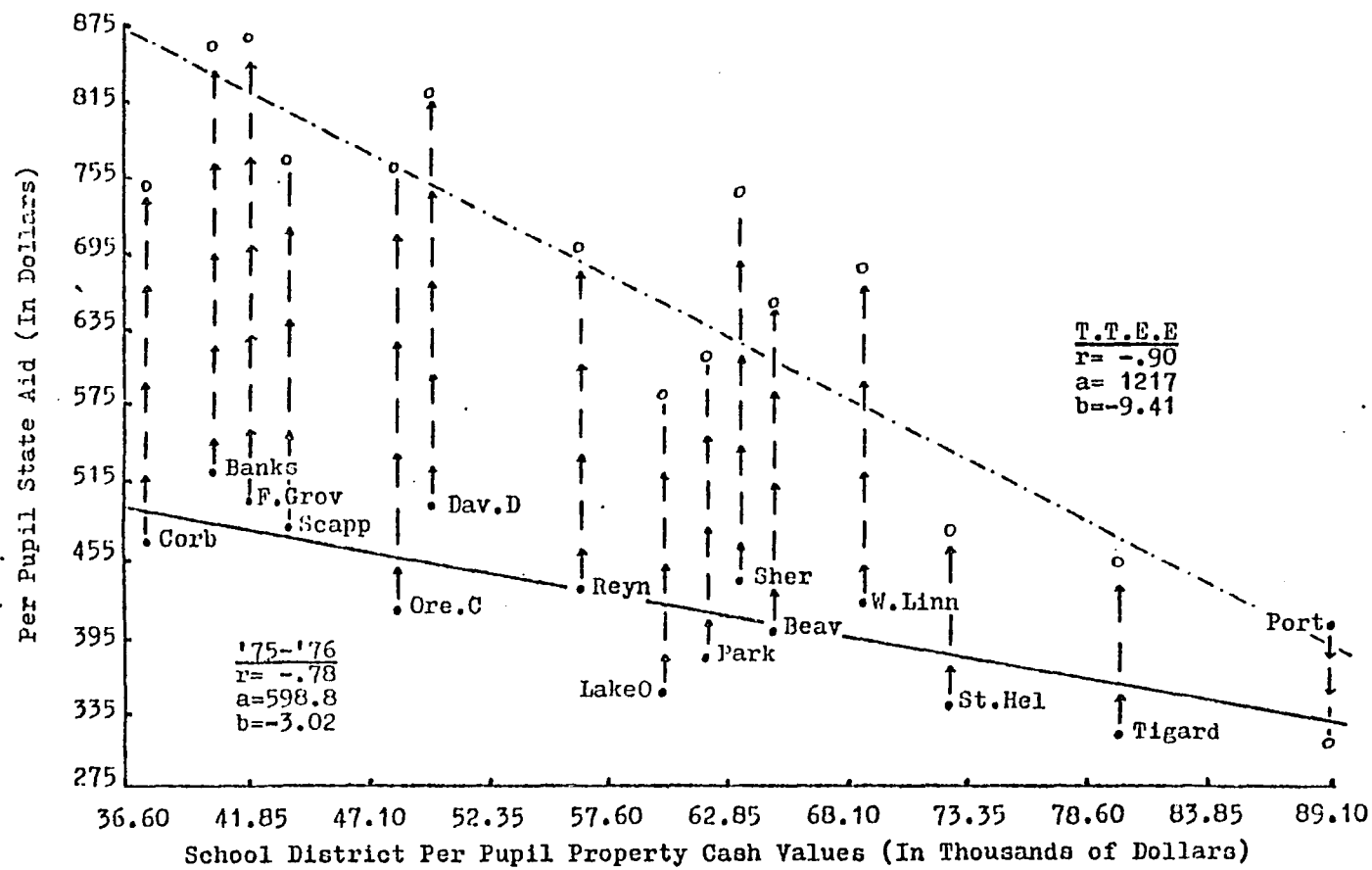


Figure 26. Scattergram of per pupil state aid and per pupil property cash values, Total Tax Effort Equalization Plan (T.T.E.E.).

$\bar{r} = -.78$  would increase to  $r = -.90$  (Figure 26) Therefore, the more per pupil property wealth a school district has, the less per pupil state aid it would receive. Like the previous financing options, this financing model was designed to equalize the differences in taxable property wealth capacities among school districts. However, a result of the implementation of this financing option which disregards the income differentials among school districts would be an increase in the existing state aid distribution inequities.

#### Tax Burden Redistribution

Analysis of the horizontal tax burden redistribution under the total tax effort equalization option indicates that, relative to the present financing scheme the degree of variations in the levels of tax payments among the equally-circumstanced taxpayers would slightly decrease. (Table XIV) This relative decrease in variations in public education tax payments among equally-circumstanced taxpayers under the total tax effort equalization plan is not significant to substantiate movement toward horizontal tax burden distribution equity. (Table XIV) For example, it is illustrated in Figure 27 that "taxpayer-2" (\$4,000.00 income; five-member family; renter) living in Beaverton School District, under the total tax effort equalization plan would pay 7.95 percent of his/her income to finance public schools as against another equally-

TABLE XIV

TAX BURDEN DISTRIBUTION\*--TOTAL TAX  
EFFORT EQUALIZATION PLAN (T.T.E.)

Public Education Tax As Percent of Income												
School Districts	\$4,000		\$8,000		\$12,000		\$18,000		\$25,000		\$35,000	
	75-76	TTE	75-76	TTE	75-76	TTE	75-76	TTE	75-76	TTE	75-76	TTE
Corb.	7.65	- 4.76	7.02	- 5.10	6.34	- 4.80	6.41	- 5.04	7.15	- 5.63	6.97	- 5.53
Dav.D.	7.12	- 4.92	6.42	- 4.94	5.80	- 4.61	5.87	- 4.81	6.56	- 5.38	6.42	- 5.29
Beav.	7.07	- 5.57	6.52	- 5.51	5.91	- 5.11	6.00	- 5.29	6.69	- 5.90	6.54	- 5.78
Ore.C.	6.57	- 3.20	6.19	- 3.85	5.65	- 3.76	5.78	- 4.07	6.44	- 4.55	6.30	- 4.50
Park.	6.02	- 4.80	5.69	- 4.85	5.22	- 4.54	5.36	- 4.75	5.98	- 5.31	5.87	- 5.22
W.Linn	6.15	- 4.66	6.19	- 5.20	5.71	- 4.93	5.88	- 5.18	6.56	- 5.79	6.42	- 5.68
Lake O.	5.87	- 4.03	5.84	- 4.58	5.40	- 4.38	5.57	- 4.66	6.21	- 5.21	6.08	- 5.12
Banks	5.71	- 1.92	5.74	- 2.97	5.31	- 3.06	5.50	- 3.45	6.13	- 3.86	6.01	- 3.85
F.Grov.	5.66	- 1.80	6.03	- 3.28	5.67	- 3.43	5.84	- 3.87	6.51	- 4.32	6.37	- 4.28
Reyn.	4.85	- 3.96	5.06	- 4.45	4.76	- 4.26	4.98	- 4.53	5.56	- 5.06	5.47	- 4.99
Port.	4.57	- 4.76	4.68	- 4.83	4.40	- 4.52	4.63	- 4.73	5.17	- 5.29	5.09	- 5.20
Sher.	4.75	- 2.70	5.35	- 3.89	5.07	- 3.90	5.33	- 4.27	5.95	- 4.78	5.84	- 4.72
Scapp.	4.11	- 3.59	4.87	- 4.50	4.67	- 4.37	4.96	- 4.69	5.54	- 5.24	5.44	- 5.16
Tigard	4.04	- 3.45	4.74	- 4.32	4.55	- 4.21	4.84	- 4.53	5.40	- 5.06	5.31	- 4.99
St.Hel.	3.34	- 3.19	4.27	- 4.16	4.18	- 4.09	4.51	- 4.43	5.04	- 4.95	4.97	- 4.88
Mean	5.57	- 3.82	5.64	- 4.43	5.24	- 4.26	5.43	- 4.56	6.06	- 5.09	5.94	- 5.01
5.59 - 4.41												
Stand.Dev.	2.17	- 1.83	1.00	- 0.83	0.72	0 0.59	0.64	- 0.53	0.78	- 0.64	0.80	- 0.66
1.27 - 1.13												

\*By representative taxpayer income groups

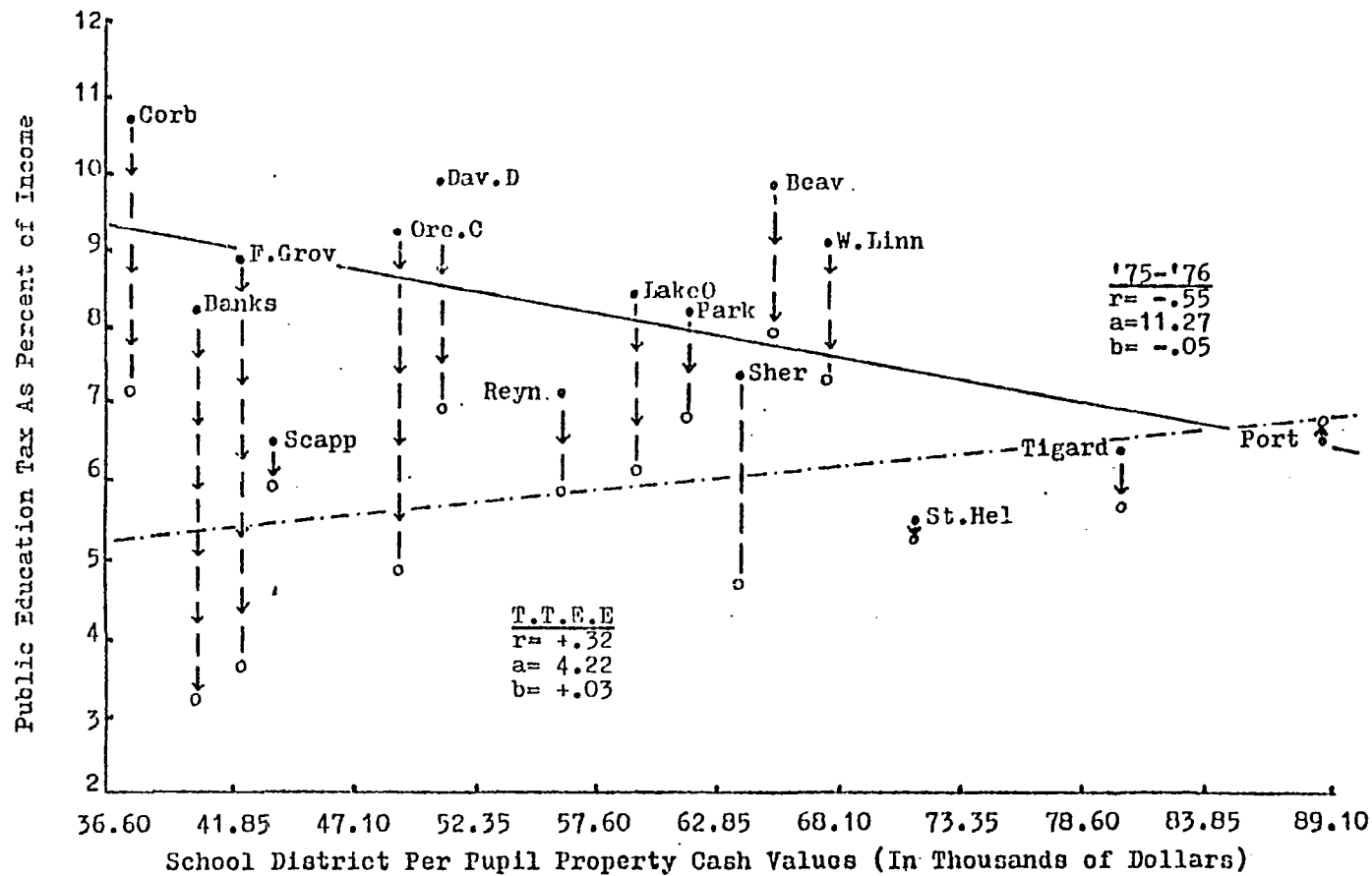


Figure 27. Horizontal tax burden redistribution, Total Tax Effort Equalization Plan (T.T.E.E.): scattergram of public education tax as percent of income and per pupil property cash values, "Taxpayer-2."

circumstanced taxpayer residing in Banks school district paying only 3.25 percent of his/her income. Relative to the present financing form, the rural school district taxpayers would become better off under the total tax effort equalization plan. Under the present financing system taxpayers in Portland, Tigard and St. Helens School Districts are paying the lowest relative percentages. Under the total tax effort equalization plan, taxpayers in three rural school districts (Banks, Forest Grove and Sherwood) would pay the lowest relative percentages. (Figure 27) Under the present financing scheme, the relationship between the horizontal tax burden distribution and the per pupil property cash values is inversely correlated.  $[r = -.46]$  Under the total tax effort equalization option this relationship would become positively correlated.  $[r = .32]$  Although this positive relationship is not statistically significant at the .05 level, the considerable change in the direction of horizontal tax distribution indicates shifting of the tax burden from per pupil property-poor to per pupil property-rich school districts. (Figure 27)

To determine the degree of vertical tax burden redistribution, the sample school districts' composite pattern of public education tax payments as a percent of income under the total tax effort equalization option has been compared to the present vertical tax burden distribution pattern. Under the total tax effort equalization plan the level of public education taxes would be reduced

for all categories of taxpayers. Also, from a vertical tax burden redistribution perspective, the change in correlation value, from -0.08 to +.29, does indicate a shift toward a relatively more progressive taxation. (Figure 28) However, relative to the federal income tax progressivity level, the total tax effort equalization plan's progressivity in terms of public education tax payments would not be significant to verify a substantial movement toward a vertical tax burden equity-based public education tax structure..

#### D. Available Wealth Equalization Plan

This financing option was designed in response to the municipal overburden problem facing urban school districts. Simply equalizing total wealth does not take into consideration other public services to be financed by taxes on the same property valuation base. One technique to overcome this problem is to tax only that portion of local property wealth available for financing public schools.\* The available wealth equalization option is basically a local guaranteed yield plan which uses the ratio of the school tax rate to the total tax rate in the calculation of state equalization aid to individual school districts.

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\*If 50 percent of local taxes is used for schools, the school district's property wealth should be discounted by 50 percent when computing state equalization. (Pierce, et al, 1975, p.50)



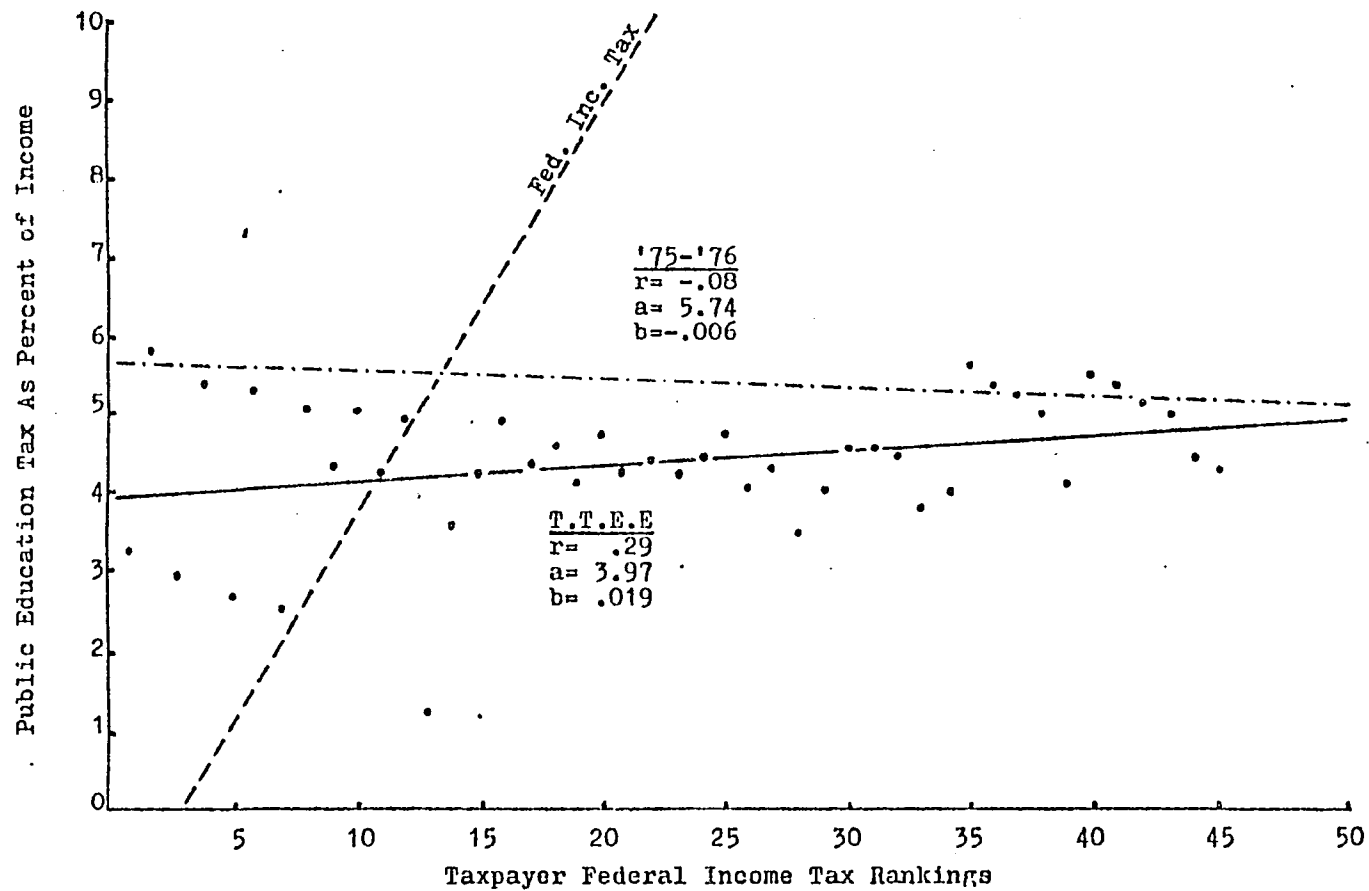


Figure 28. Vertical tax burden redistribution Total Tax Effort Equalization Plan(T.T. E.E.): scattergram of public education tax as percent of income and taxpayer federal income tax rankings, sample school districts' composite average.

Under this plan the state would guarantee \$770.00 per ADMW (average daily membership weighted) at a school tax rate of \$10.00 per \$1,000.00 of true cash value. Districts would receive an additional \$40.00 for each \$1.00 of tax up to \$16.00, and \$25.00 for each \$1.00 of tax from \$16.00 to a maximum of \$22.00. Districts would be permitted to tax above \$22.00 without recapture. (Pierce, et al, 1975, p.50)

The primary advantage of the available wealth equalization plan is that it would help those school districts with relatively higher noneducational property taxes. This financing option has certain basic problems. First, there exists the problem of differentiating apparent municipal overburden from community preference situations. Secondly, there exists a problem of adjusting the financing scheme to the communities where some publicly-needed services are provided privately. Finally, it could be argued that the municipal overburden situation may be a result of service delivery inefficiencies in high-density urban areas. (Pierce, et al, 1975, p.51)

#### School District Property Tax Rates

Analysis of the simulated tax rates among the sample school districts under the available wealth equalization plan indicates that local public education tax rates would decrease for 11 of the sample school districts. Of that 11, four school districts, Oregon City, Portland, David Douglas and Beaverton, would end up with substantial property tax reductions, averaging 20 percent. On the other hand, four suburban and rural school districts (Scappoose,

West Linn, St. Helens and Tigard) would end up with relatively higher tax rates. Especially, the Scappoose school district's property tax rate for public schools would increase approximately 27 percent. (Figure 29)

Relative to the present financing scheme, the inverse relationship between the public school property tax rates and per pupil property cash values under the available wealth equalization plan would become less strongly correlated. [ $\bar{r} = -.61$  would decrease to  $r = -.49$ ] (Figure 29) Accordingly, under this financing option school district property tax rates would be determined to a lesser extent by the per pupil property cash values of school districts. Because of this financing model's emphasis on the municipal overburden-based state aid distribution criterion, the property tax rates would be determined to a lesser degree by the per pupil property wealth of the school districts.

#### State Aid Distribution

Analysis of per pupil state aid distribution indicates that, relative to the present public school finance scheme, under the available wealth equalization plan the level of state aid distribution would increase considerably for most, and would decrease slightly for some, school districts. (Figure 30) For example, under the available wealth equalization plan all except three sample school districts would receive relatively more per pupil state aid. The urban school districts of David Douglas, Parkrose and Portland,

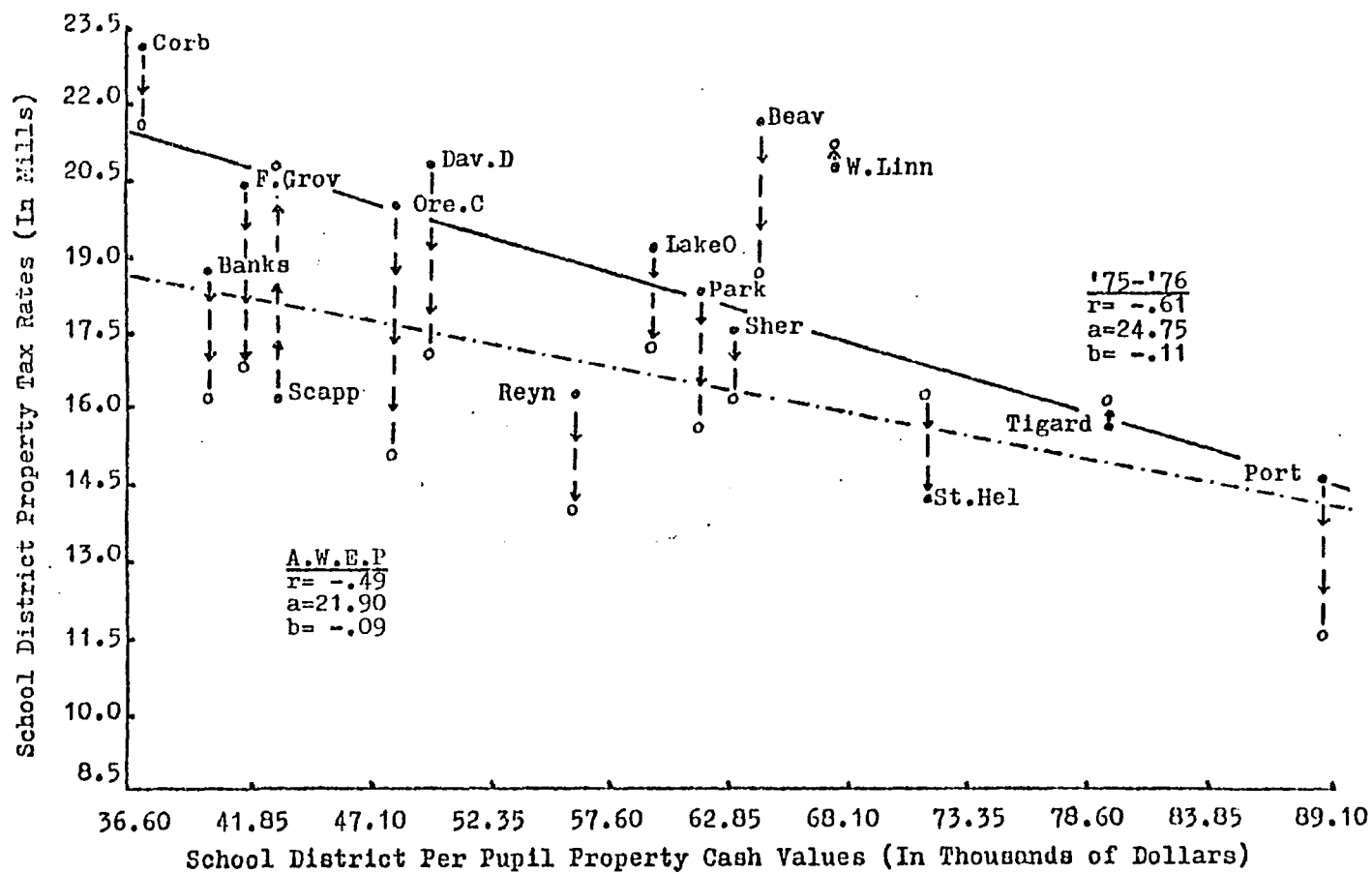


Figure 29. Scattergram of school district property tax rates and per pupil property cash values, Available Wealth Equalization Plan (A.W.E.P.).

especially, would be the recipients of substantial increases in state aid distribution. On the other hand, three suburban school districts, West Linn, St. Helens and Tigard, would receive relatively less per pupil state aid. The state aid redistribution aspects of the available wealth equalization plan would make the urban school districts relatively better off at the expense of suburban school districts. From an income redistribution perspective this financing option makes the state funds increasingly available to property-rich but income-poor school districts at the expense of property-poor but income-rich suburban school districts.

Under the available wealth equalization plan, the inverse linear relationship between per pupil state aid to school districts and per pupil property cash values of school districts would become less strongly correlated. [ $\bar{r} = -.78$  would decrease to  $r = 0.52$ ] (Figure 30) Concurrently, under this financing option, per pupil state aid distribution would be determined to a lesser extent by per pupil property cash values of school districts. (Figure 30) Primarily because of its designed purpose to take the municipal overburden situation into account, this financing model's state aid distribution is based more on the local municipal overburden ratios than on local per pupil property wealth. A major result of the implementation of this financing model would be reallocation of resources from suburban to urban and, to a lesser extent, to rural

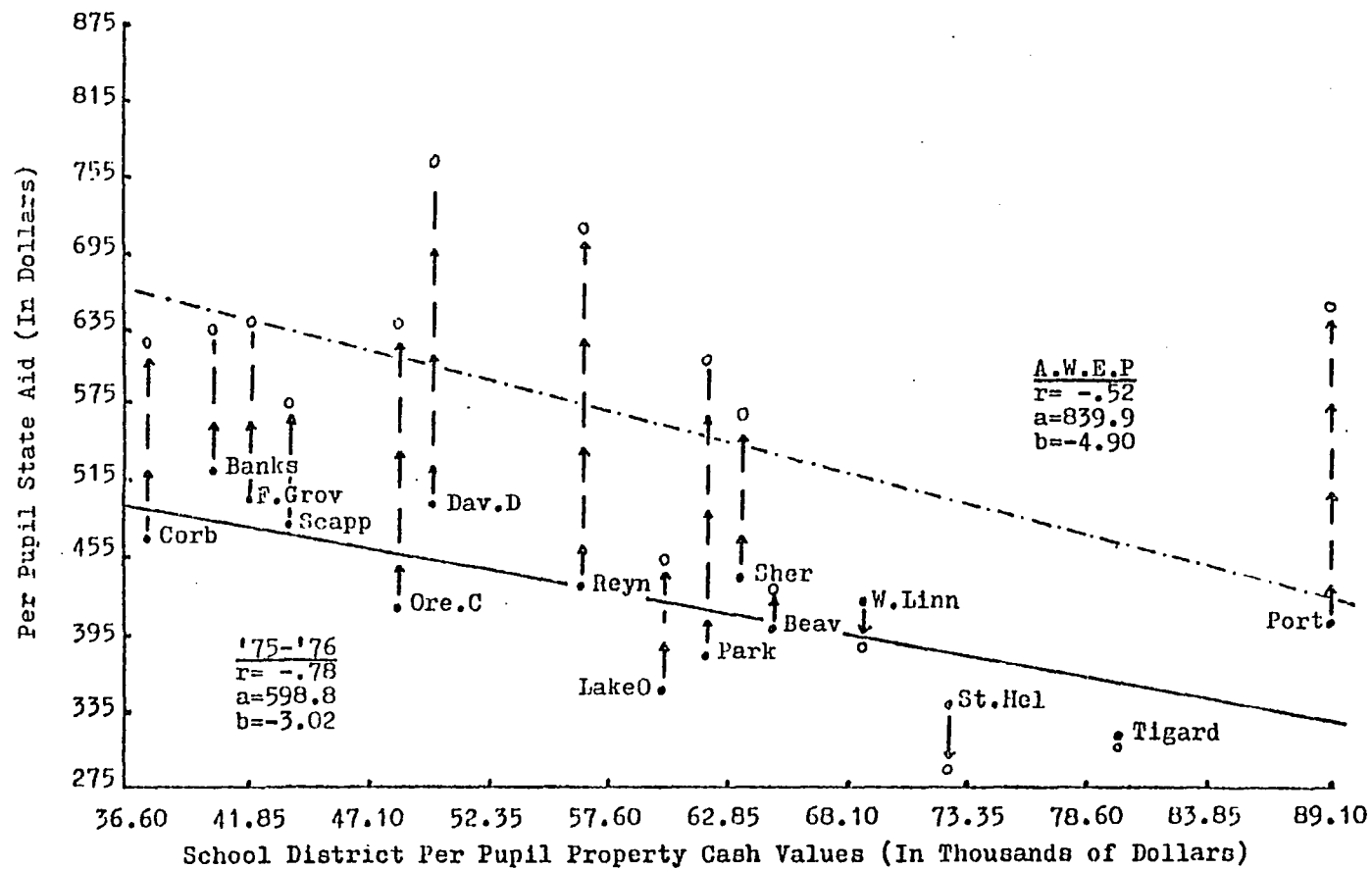


Figure 30. Scattergram of per pupil state aid and per pupil property cash values, Available Wealth Equalization Plan (A.W.E.P.).

school districts. This reduces the current inequities in state aid distribution which favor suburban and rural districts over urban ones.

#### Tax Burden Redistribution

Analysis of the horizontal tax burden redistribution under the available wealth equalization plan indicates that, relative to the present financing scheme, the degree of variations in the levels of tax payments among the equally-circumstanced taxpayers would slightly decrease. (Table XV)

The relative decrease in variations in tax payments among equally-circumstanced taxpayers is not significant to substantiate a movement toward horizontal tax burden distribution equity. (Table XV and Figure 31) For example, as illustrated in Figure 31, "taxpayer-2" (\$4,000.00 income; five-member family; renter) living in Corbett School District under the available wealth equalization plan would pay 9.78 percent of his/her income to finance public schools as compared with 10.7 percent under the present financing form. On the other hand, in the lower quadrant, under the available wealth equalization plan the taxpayers located in the Portland school district would pay the lowest percentage of public education taxes, 4.94 percent, as against the 5.5 percent public education tax paid by the taxpayers in St. Helens School District under the present financing form.

TABLE XV

TAX BURDEN DISTRIBUTION\*--AVAILABLE  
WEALTH EQUALIZATION PLAN (AWE)

Public Education Tax As Percent of Income												
School Districts	\$4,000		\$8,000		\$12,000		\$18,000		\$25,000		\$35,000	
	75-76	AWE	75-76	AWE	75-76	AWE	75-76	AWE	75-76	AWE	75-76	AWE
Corb.	7.65	- 6.90	7.02	- 6.53	6.34	- 5.95	6.41	- 6.07	7.15	- 6.76	6.97	- 6.61
Dav.D.	7.12	- 5.59	6.42	- 5.40	5.80	- 4.98	5.87	- 5.15	6.56	- 5.75	6.42	- 5.65
Beav.	7.07	- 5.68	6.52	- 5.59	5.91	- 5.16	6.00	- 5.34	6.69	- 5.96	6.54	- 5.84
Ore.C.	6.57	- 4.40	6.19	- 4.72	5.65	- 4.47	5.78	- 4.72	6.44	- 5.26	6.30	- 5.18
Park.	6.02	- 4.78	5.69	- 4.84	5.22	- 4.53	5.36	- 4.74	5.98	- 5.30	5.87	- 5.21
W.Linn	6.15	- 6.38	6.19	- 6.34	5.71	- 5.83	5.88	- 5.99	6.56	- 6.68	6.42	- 6.53
Lake O.	5.87	- 5.10	5.84	- 5.32	5.40	- 4.98	5.57	- 5.19	6.21	- 5.80	6.08	- 5.69
Banks	5.71	- 4.58	5.74	- 4.97	5.31	- 4.70	5.50	- 4.94	6.13	- 5.52	6.01	- 5.43
F.Grov.	5.66	- 4.09	6.03	- 4.99	5.67	- 4.80	5.84	- 5.11	6.51	- 5.70	6.37	- 5.59
Reyn.	4.85	- 3.91	5.06	- 4.41	4.76	- 4.23	4.98	- 4.51	5.56	- 5.03	5.47	- 4.96
Port.	4.57	- 3.39	4.68	- 3.84	4.40	- 3.72	4.63	- 4.00	5.17	- 4.48	5.09	- 4.43
Sher.	4.75	- 3.93	5.35	- 4.80	5.07	- 4.63	5.33	- 4.94	5.95	- 5.51	5.84	- 5.42
Scapp.	4.11	- 6.02	4.87	- 6.14	4.67	- 5.68	4.96	- 5.86	5.54	- 6.54	5.44	- 6.40
Tigard	4.04	- 4.21	4.74	- 4.86	4.55	- 4.64	4.84	- 4.92	5.40	- 5.50	5.31	- 5.40
St.Hel.	3.34	- 4.27	4.27	- 4.93	4.18	- 4.71	4.51	- 4.99	5.04	- 5.57	4.97	- 5.47
Mean	5.57	- 4.88	5.64	- 5.18	5.24	- 4.87	5.43	- 5.10	6.06	- 5.69	5.94	- 5.59
5.59 - 5.14												
Stand.Dev.	2.17	- 1.95	1.00	- 0.91	0.72	0 0.67	0.64	- 0.62	0.78	- 0.75	0.80	- 0.77
1.27 - 1.18												

\*By representative taxpayer income groups



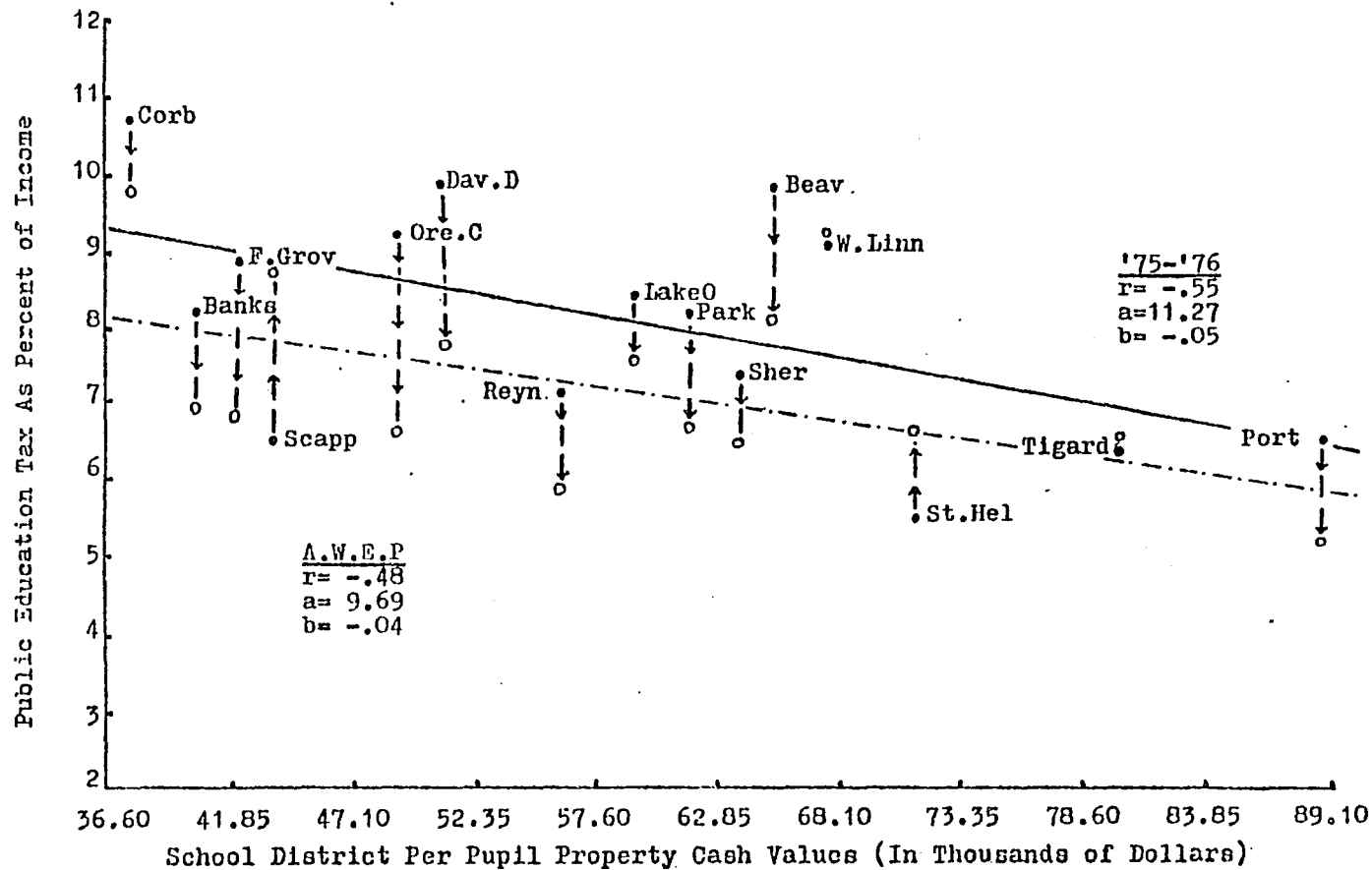


Figure 31. Horizontal tax-burden redistribution, Available Wealth Equalization Plan (A.W.E.P.): scattergram of public education tax as percent of income and per pupil property cash values, "Taxpayer-2."

Under the available wealth equalization plan the inverse relationship between public education tax payments as percent of income and per pupil property cash values of school districts would become less strongly correlated. [ $\bar{r} = -.55$  would decrease to  $r = -.49$ ] (Figure 31) Accordingly, under this financing option the horizontal tax burden distribution inequities would be determined to a lesser extent by the per pupil property wealth of the school districts.

To determine the degree of vertical tax burden redistribution, the sample school districts' composite pattern of public education tax payments as a percent of income under the available wealth equalization plan was compared to the present vertical tax burden distribution patterns. (Figure 32) It is evident that under the available wealth equalization plan the level of public education taxes would decrease for all categories of taxpayers. However, from a vertical tax burden redistribution perspective the change in correlation value, from  $-0.08$  to  $-0.05$  is insignificant. Accordingly, analysis of the public education tax payments as a percent of income by the same set of taxpayers under the available wealth equalization plan indicates no significant change in the existing vertical tax burden distribution pattern, which is a no-pattern distribution in terms of regressivity-progressivity continuum.

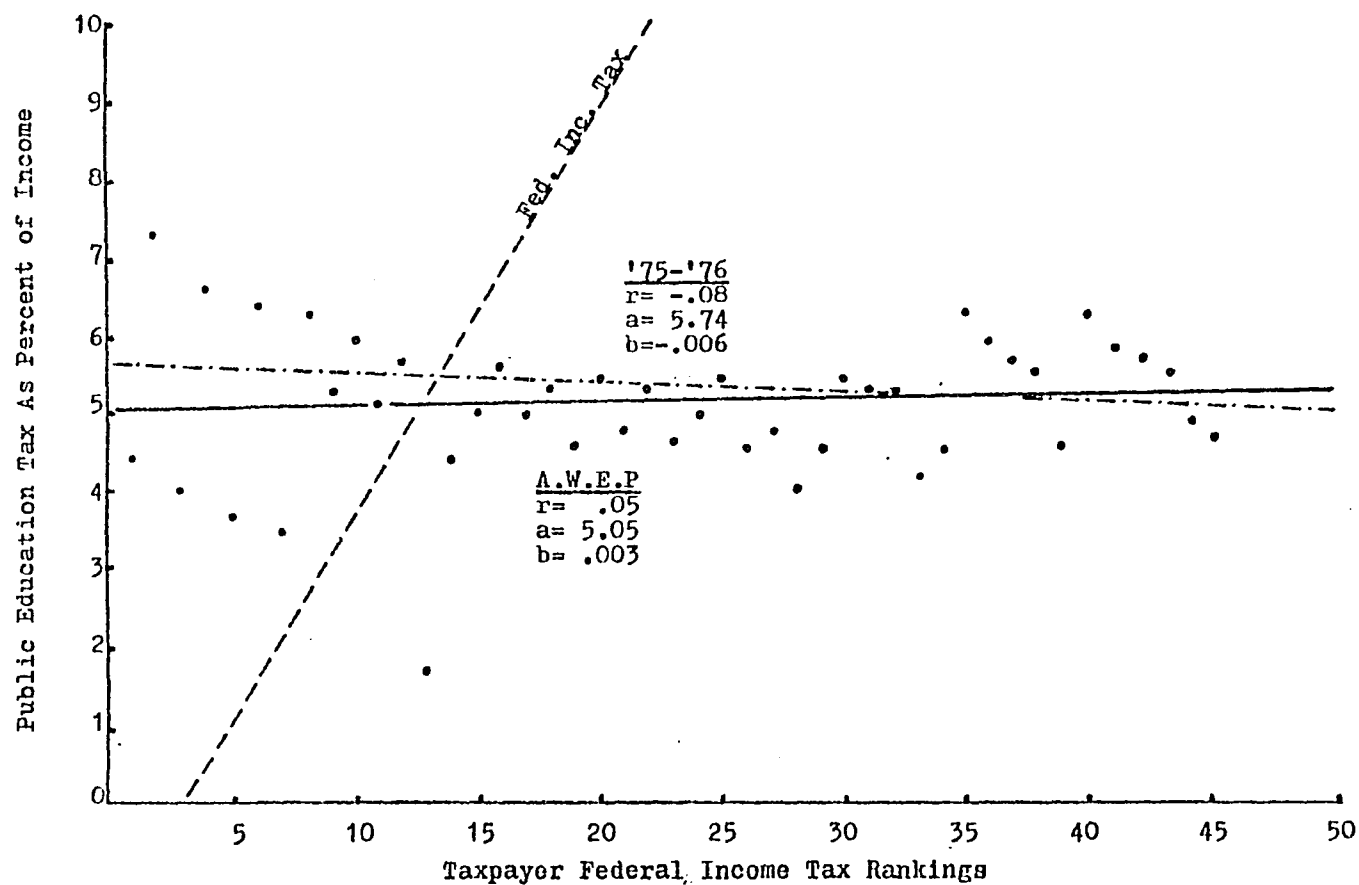


Figure 32. Vertical tax burden redistribution Available Wealth Equalization Plan(A.W. E.P.): scattergram of public education tax as percent of income and taxpayer federal income tax rankings, sample school districts' composite average.

### Summary of Major Findings

This chapter presented the reform alternatives within the presently-operating public school finance system. In accordance with the hypotheses and postulates of this research, and within the parameters and limitations thereupon, the implementation of reforms within the present system of public school finance would result in the following changes:

#### 1. School District Property Tax Rates:

a. The inverse relationship between the property tax rates and the per pupil property cash values of school district would become less strongly correlated under the foundation phase-in and the available wealth equalization plans.

b. Under the local guaranteed yield and the total tax effort equalization plans the inverse relationship between the property tax rates and the per pupil property cash values of school districts would become statistically insignificant at the .05 level.

#### 2. State Aid to School Districts:

a. The inverse relationship between the per pupil state aid distribution to school districts and per pupil property cash values of the school districts would become more strongly correlated under the foundation phase-in, local guaranteed yield and total tax effort equalization plans.

b. Under the available wealth equalization plan the inverse relationship between the per pupil state aid to school

districts and per pupil property cash values of school districts would become less strongly correlated.

### 3. Horizontal Tax Burden Distribution:

a. The inverse relationship between the variations in the level of tax payments of income among the equally-circumstanced taxpayers and the per pupil property cash values of school districts would become less strongly correlated under the foundation phase-in and the available wealth equalization plans.

b. Under the local guaranteed yield and the total tax effort equalization plans, the inverse relationship between the variations in the level of tax payments among the equally-circumstanced taxpayers and the per pupil property cash values would become statistically insignificant at the .05 level.

c. Under any of the reform within the present system alternatives, the variations in the level of public education tax payments among the equally-circumstanced taxpayers would not significantly change to substantiate a movement toward a horizontal tax burden distribution equity-based revenue system.

### 4. Vertical Tax Burden Distribution:

a. Relative to federal income tax progressivity levels, the total tax effort equalization plan's progressivity in terms of public education tax payments would not be sufficient to verify a substantial movement toward a vertical

tax burden equity-based public education revenue structure.

b. Under the foundation phase-in, the local guaranteed yield and the available wealth equalization plans, there would be no significant change in the existing vertical tax burden distribution pattern, which is a no-pattern distribution in terms of a regressivity-progressivity continuum.

## CHAPTER VI

### INCREASED STATE SUPPORT

The second major alternative to reform the financing of public schools considered by this study is based on increasing the state's share of support. During the 1975-1976 school year, the state support to school districts amounted to approximately 30 percent of the total revenues for public schools. Oregon is one of the few states with less than 35 percent support for public schools. Also, the level of state equalization for the 1975-1976 school year was less than 20 percent of the total state aid to public schools. (State of Oregon Department of Education, 1976)

Depending upon the magnitude, increasing the state's share in supporting public schools may result in reduction of the inequities in revenue capacities among school districts. Research and studies on this subject have indicated that the higher the state's share for public schools, the less become the expenditure disparities among school districts. (Michelson, 1974; Levin, 1972; Briley, 1971; Rossmiller, 1971; and Johns, 1971) Furthermore, a major study by the National Education Finance Project reported that increasing the state's responsibility for funding its schools' support program would result in relatively greater financial equalization among school districts. (NEFP, Vol. 5, 1971, p.249) However, a simple marginal increase in the level of state support may not accomplish

much in terms of substantial fiscal equalization among school districts. As indicated by the N.E.F. Project, a state may advance toward relatively greater equalization of the financial resources available to school districts when it:

1. Increases the percent of school revenue provided from state sources.
2. Apportions the state funds available in inverse proportion to the taxpaying ability of local school districts.
3. Makes allowance in its apportionment formula for the necessary variations in cost per unit of educational need. (NEFP, 1971, p.246)

The 1977 Oregon State Legislature increased the level of state support to public schools from 30 to 40 percent of the total cost of operational expenditures, effective the 1978-1979 school year. (Oregon State House Bill 3209, 1977) The State Legislature also made certain changes in the state aid distribution formulas.

A new distribution formula will be in effect the second of the biennium (1978-1979) which will place greater emphasis on equalizing property tax effort between school districts. The state will also participate in the funding of program costs up to the statewide average. This should result in significant state revenue gains for all but a handful of school districts in the state. ...However, a save harmless provision was included in the law at OSBA (Oregon School Boards Association) request which provides that no district will receive less money from the state than they did in 1977-1978. (OSBA Legislative Report, 1977, p.1)

The approved state aid distribution formula provides each school district with a basic grant equal to



30 percent of the district's per pupil operational expenditure up to the statewide average. (Oregon Department of Education, 1977, p.6) These basic grant payments would consume some 67 percent of the basic state support fund. The remainder would be distributed to school districts according to their relative property wealth and tax effort. The equalization proportion of the state aid distribution formula indicates an increase from 18 percent of the present formula to 33 percent. (OSBA, Legislative Report, 1977, p.13)

#### School District Property Tax Rates

The property tax rates among school districts under the increased state support financing alternative would decrease considerably for all school districts except Portland, where the property tax rate would remain the same. (Figure 33) In actuality, if the increased state support alternative were not coupled with a save-harmless provision, the Portland school district would have to raise its property tax rate. On the other hand, the rural Corbett School District's property tax rate would decrease from 23.25 to 12.56, a 46 percent decrease. Also, the Scappoose school district's tax rate would decrease from 16.21 to 9.61, a 41 percent decrease. However, as indicated by the data, the decrease in tax rates would be relatively less in suburban and urban districts. For example, as compared with the 46 percent decrease in

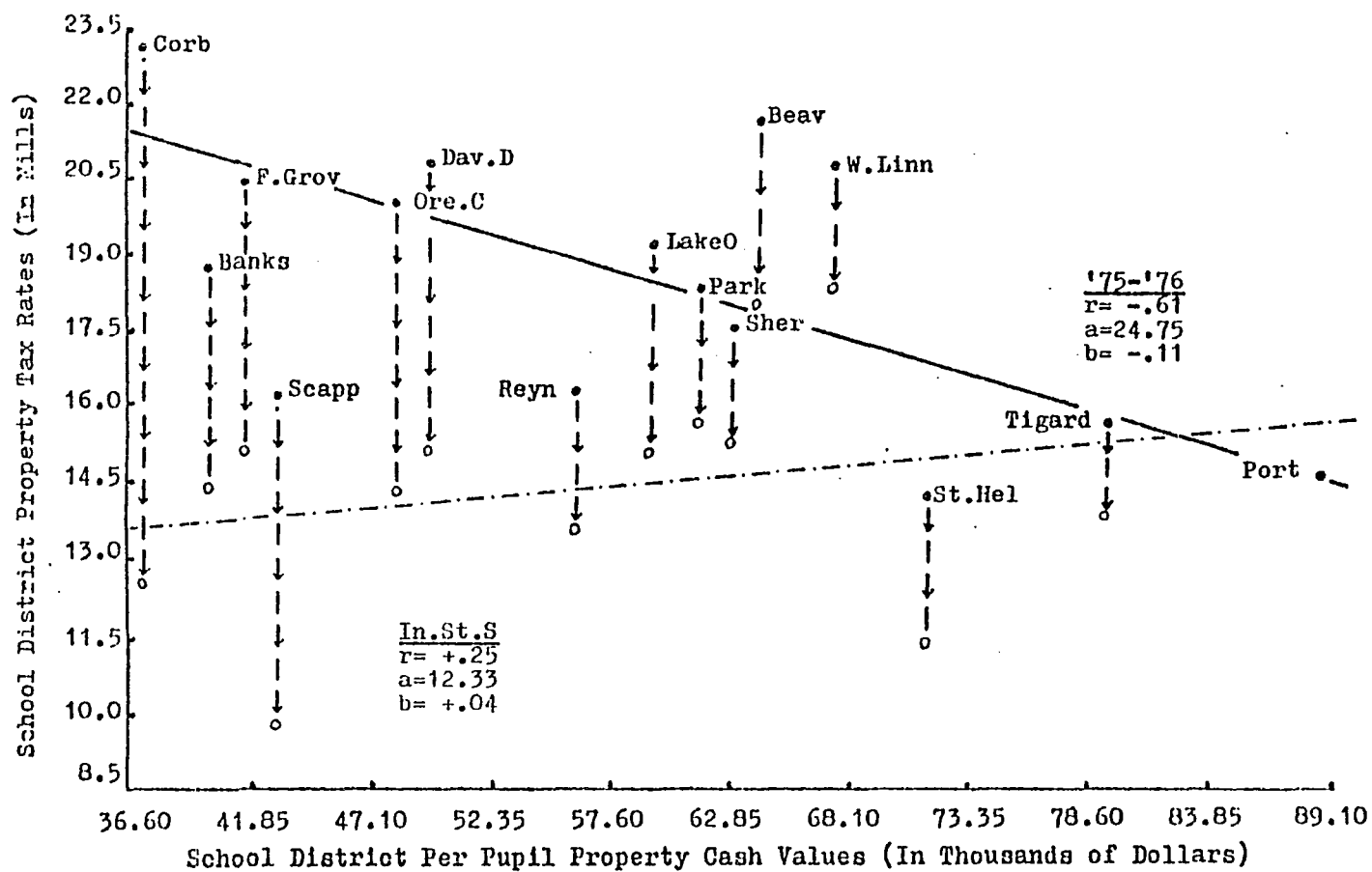


Figure 33. Scattergram of school district property tax rates and per pupil property cash values, Increased State Support (In.St.S.).

Corbett School District and the 41 percent decrease in Scappoose School District, property tax rates would be reduced 16 and 10 percent in Beaverton and Tigard School Districts, respectively. Furthermore, the property tax rates would be reduced only 17 percent in David Douglas and 14 percent in Parkrose School Districts. Evidently, the rural school districts would benefit the most, in terms of property tax reduction, followed by urban fringe school districts and suburban school districts. The only school district which would appear to lose as a result of the change is Portland School District. Although at the initial stage a save-harmless provision might diminish the apparent cost increases in urban central school district operations resulting from lower levels of state aid, Portland School District, relative to the present financing scheme, would have to rely increasingly more on its property tax base.

Under the present financing scheme the variations in local school district property tax rates were significantly and negatively correlated to the school district per pupil property cash values.  $[r = -.61]$  (Figure 23) This means that, under the present financing scheme, the higher the per pupil property wealth a school district has, the lower is the property tax rate in financing public schools. Increasing the state support level from 30 to 40 percent, coupled with increasing state equalization aid, appears to result in a

statistically insignificant (at the .05 level) and weak positive correlation between local school district property tax rates and per pupil property cash values.  $\sqrt{r} = +.257$  (Figure 33) Under the increased state support alternative and contrary to the present situation, the higher the per pupil property wealth of a school district, the higher would be the property tax rate in financing public schools.\* This would put the rural school districts in the Portland metropolitan area in a relatively advantageous position.\*\* On the other hand, the increased state support alternative would place the urban and suburban school districts with high per pupil property wealth in a relatively disadvantageous position.

#### State Aid Distribution

The analysis of per pupil state aid distribution indicates that, relative to the present public school finance scheme, under the increased state support alternative the level of state aid distribution would increase substantially for all school districts except Portland. (Figures 34 and 35) Because the state equalization aid is based on per pupil property wealth and property tax effort, school districts with relatively low per pupil property wealth and greater property tax effort are

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\*Even though this relationship is not statistically significant at the .05 level, the direction of the change, relative to the present financing situation, would support this assumption.

\*\*This may not hold true for all rural school districts in the state, especially those with a small student body.

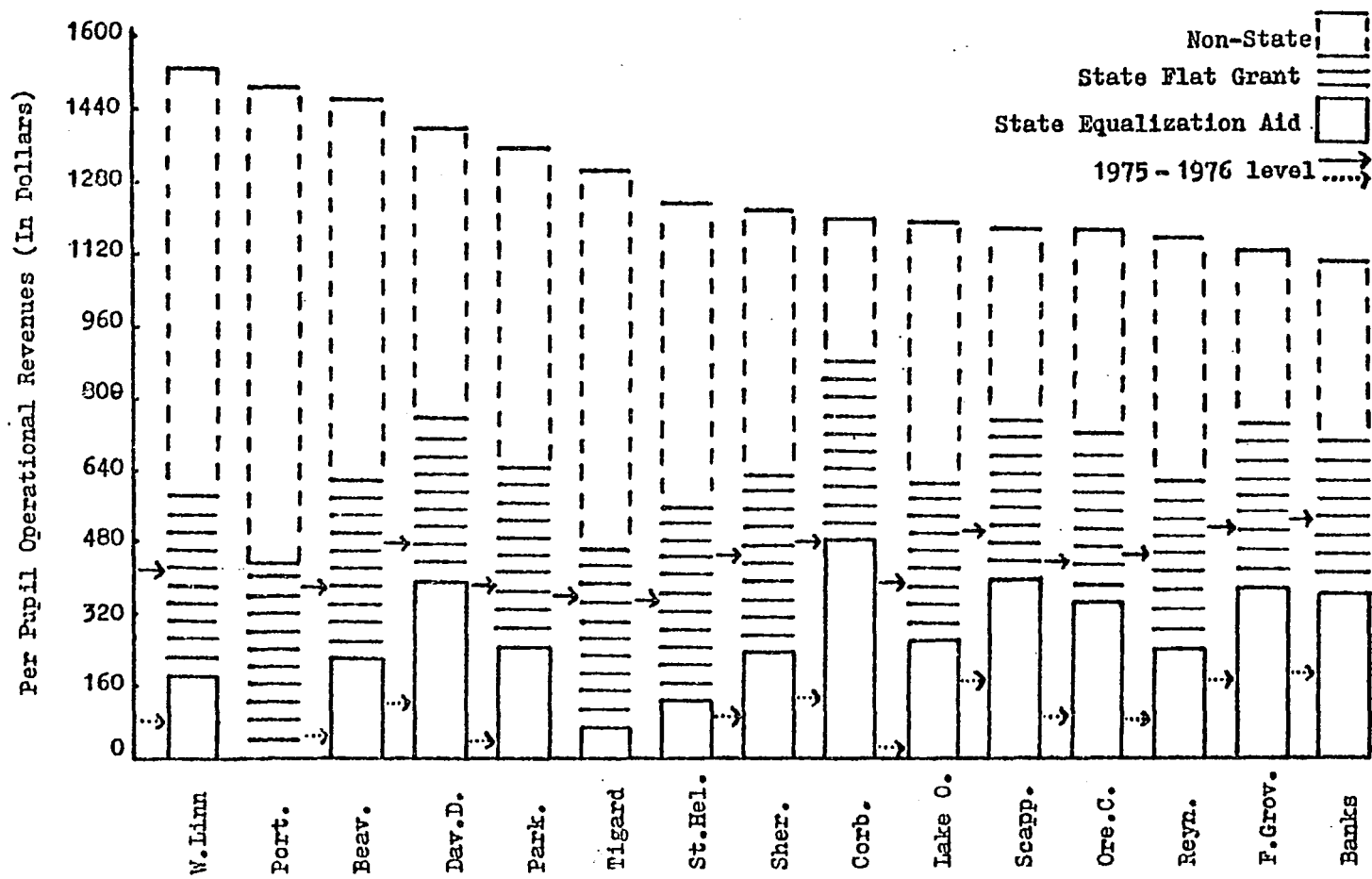


Figure 34. Composition of school district per pupil operational revenues -- increased state support.

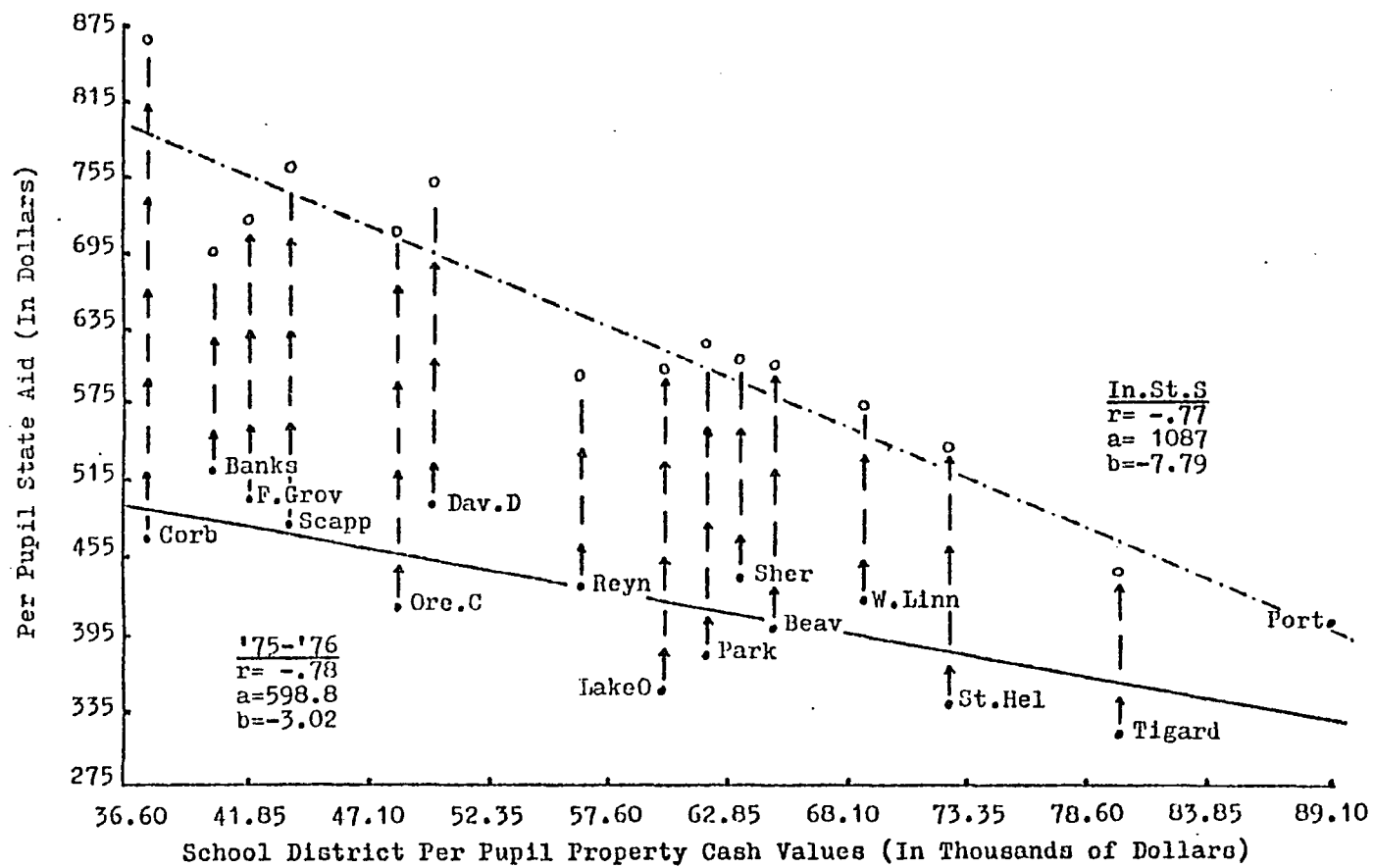


Figure 35. Scattergram of per pupil state aid and per pupil property cash values, Increased State Support(In.St.S.)

receiving relatively greater per pupil equalization aid from the state. Figures 34 and 35 illustrate that the rural school districts of Corbett, Banks, Forest Grove and Seapoose would be the recipients of relatively greater marginal increases of state aid when compared to the state aid receipts of the urban fringe and suburban school districts.

Without a save-harmless provision, the state aid redistributive aspects of the increased state support alternative would make the urban Portland school district relatively worse off. The enactment of a save-harmless provision which prevents possible reductions in state aid to urban central school districts would also prevent a property tax rate increase. However, when the resultant cost burden distribution of increasing state support to public schools is taken into consideration, the taxpayers in urban central school districts would definitely be in relatively worse positions. Such policy change, while not increasing the benefits in terms of per pupil receipts, would increase the urban taxpayers' contributions to the financing of public schools in the state. Since the increased state support alternative designed by the Oregon Legislature does not propose a state income tax increase, the overall tax burden for the urban central taxpayers would remain the same. However, in order to finance the increased support to public schools, the state would have to reallocate funds from noneducation to education-related

services. Such budgetary reallocations would increase the portion of state general funds to be allocated for support of public schools.\* Concomitantly, this would result in a marginal increase in public education tax burden for the urban central taxpayer without an increase in benefits.

The relationship between per pupil state aid and per pupil property cash values indicates that, relative to the present financing scheme, under the increased state support alternative the per pupil state aid distribution pattern would not change.  $\bar{r} = -.78$  would decrease to  $r = -.777$  (Figure 35) Under the increased state support model the more per pupil property wealth a school district has, the less per pupil state aid it would receive. The equalization aspect of this financing alternative has been designed to minimize the differences in taxable property wealth capacities among school districts. The implementation of the increased state support alternative would result in decreased state aid distribution inequities. From an income redistribution perspective, this financing alternative would still make the state funds available to property-poor but income-rich school districts at the expense of income-poor but property-rich school districts.

#### Tax Burden Redistribution

##### Analysis of the horizontal tax burden redistribution

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\*Under this financing model the state funds to support public schools would increase from 33.2 to 44.3 percent of the state general funds' budget.



indicates that, relative to the present situation, under the increased state support financing alternative variations in the level of tax payments among the equally-circumstanced taxpayers would decrease slightly. The variations in public education tax payments as percent of income presented in Table XVI indicate that the horizontal tax burden distribution inequities under the increased state support alternative would be lessened.

However, as indicated in the same table, that difference in public education tax payments as percent of income for the \$4,000.00 taxpayer income group would vary from a low of 1.66 in Scappoose to a high of 5.75 in Beaverton School District. Furthermore, it is illustrated in Figure 36 that "taxpayer-2" (\$4,000.00 income; five-member family; renter) living in Beaverton School District would pay 8.01 percent of his/her income to finance public schools as against the 3.22 percent paid by the equally-circumstanced taxpayer living in Scappoose School District. Therefore, it is evident that under the increased state support alternative, even though relative to the present financing scheme it is reduced, the level of horizontal tax burden distribution inequity would still be substantial.

Under the present financing form, analysis has indicated a significant and recognizable negative correlation between horizontal tax burden distribution and the school district per pupil property wealth.  $[r = -.557]$  (Figure

TABLE XVI

TAX BURDEN DISTRIBUTION\*--INCREASED  
STATE SUPPORT (ISS)

School Districts	Public Education Tax As Percent of Income											
	\$4,000		\$8,000		\$12,000		\$18,000		\$25,000		\$35,000	
	75-76	ISS	75-76	ISS	75-76	ISS	75-76	ISS	75-76	ISS	75-76	ISS
Corb.	7.65	- 3.28	7.02	- 4.25	6.34	- 4.28	6.41	- 4.72	7.15	- 5.29	6.97	- 5.27
Dav.D.	7.12	- 4.88	6.42	- 5.15	5.80	- 4.89	5.87	- 5.26	6.56	- 5.90	6.42	- 5.84
Beav.	7.07	- 5.75	6.52	- 5.86	5.91	- 5.54	6.00	- 5.84	6.69	- 6.54	6.54	- 6.45
Ore.C.	6.57	- 4.21	6.19	- 4.84	5.65	- 4.72	5.78	- 5.10	6.44	- 5.72	6.30	- 5.67
Park.	6.02	- 5.05	5.69	- 5.29	5.22	- 5.05	5.36	- 5.36	5.98	- 6.00	5.87	- 5.95
W.Linn	6.15	- 5.18	6.19	- 5.83	5.71	- 5.59	5.88	- 5.94	6.56	- 6.64	6.42	- 6.55
Lake O.	5.87	- 4.24	5.84	- 4.99	5.40	- 4.85	5.57	- 5.27	6.21	- 5.90	6.08	- 5.84
Banks	5.71	- 4.06	5.74	- 4.79	5.31	- 4.71	5.50	- 5.12	6.13	- 5.74	6.01	- 5.69
F.Grov.	5.66	- 4.32	6.03	- 5.01	5.67	- 4.88	5.84	- 5.27	6.51	- 5.90	6.37	- 5.84
Reyn.	4.85	- 3.79	5.06	- 4.56	4.76	- 4.51	4.98	- 4.91	5.56	- 5.51	5.47	- 5.47
Port.	4.57	- 4.76	4.68	- 5.00	4.40	- 4.81	4.63	- 5.16	5.17	- 5.79	5.09	- 5.73
Sher.	4.75	- 3.66	5.35	- 4.86	5.07	- 4.84	5.33	- 5.29	5.95	- 5.93	5.84	- 5.87
Scapp.	4.11	- 1.66	4.87	- 3.36	4.67	- 3.59	4.96	- 4.13	5.54	- 4.64	5.44	- 4.64
Tigard	4.04	- 3.50	4.74	- 4.54	4.55	- 4.60	4.84	- 5.04	5.40	- 5.65	5.31	- 5.61
St.Hel.	3.34	- 2.38	4.27	- 3.88	4.18	- 4.01	4.51	- 4.52	5.04	- 5.07	4.97	- 5.06
Mean	5.57	- 4.04	5.64	- 4.50	5.24	- 4.72	5.43	- 5.13	6.06	- 5.75	5.94	- 5.70
5.59 - 4.79												
Stand.Dev.	2.17	- 1.44	1.00	- 0.67	0.72	0 0.39	0.64	- 0.38	0.78	- 0.42	0.80	- 0.50
1.27 - 0.83												

\*By representative taxpayer income groups

36) This relationship is statistically insignificant at the .05 significance level. Nevertheless, from a comparative perspective the increased state support alternative would make the horizontal tax burden distribution relatively less responsive to the school district property wealth and relatively more responsive to the tax efforts and level of expenditures of the school districts. The primary cause of this is the criterion upon which the state aid to school districts is distributed. Because it would be advantageous for school districts to show greater tax effort to raise their level of operational expenditures to the statewide level under this financing model, future horizontal tax burden inequities would be determined, not only by the per pupil property wealth of the districts, but also by the school districts' responses to state aid formulas. This in turn would minimize the overall differences in operational expenditure levels among school districts. However, such an expenditure equalization procedure, without an equity-based tax burden distribution policy, would solve only a segment of the problem inherent to financing public schools.

Despite the fact that the horizontal tax burden inequity situation would not be remedied under this financing alternative, the change in the relationship between the public education tax as a percent of income and the per pupil property wealth of school districts indicates a considerable redistribution of tax burden between school

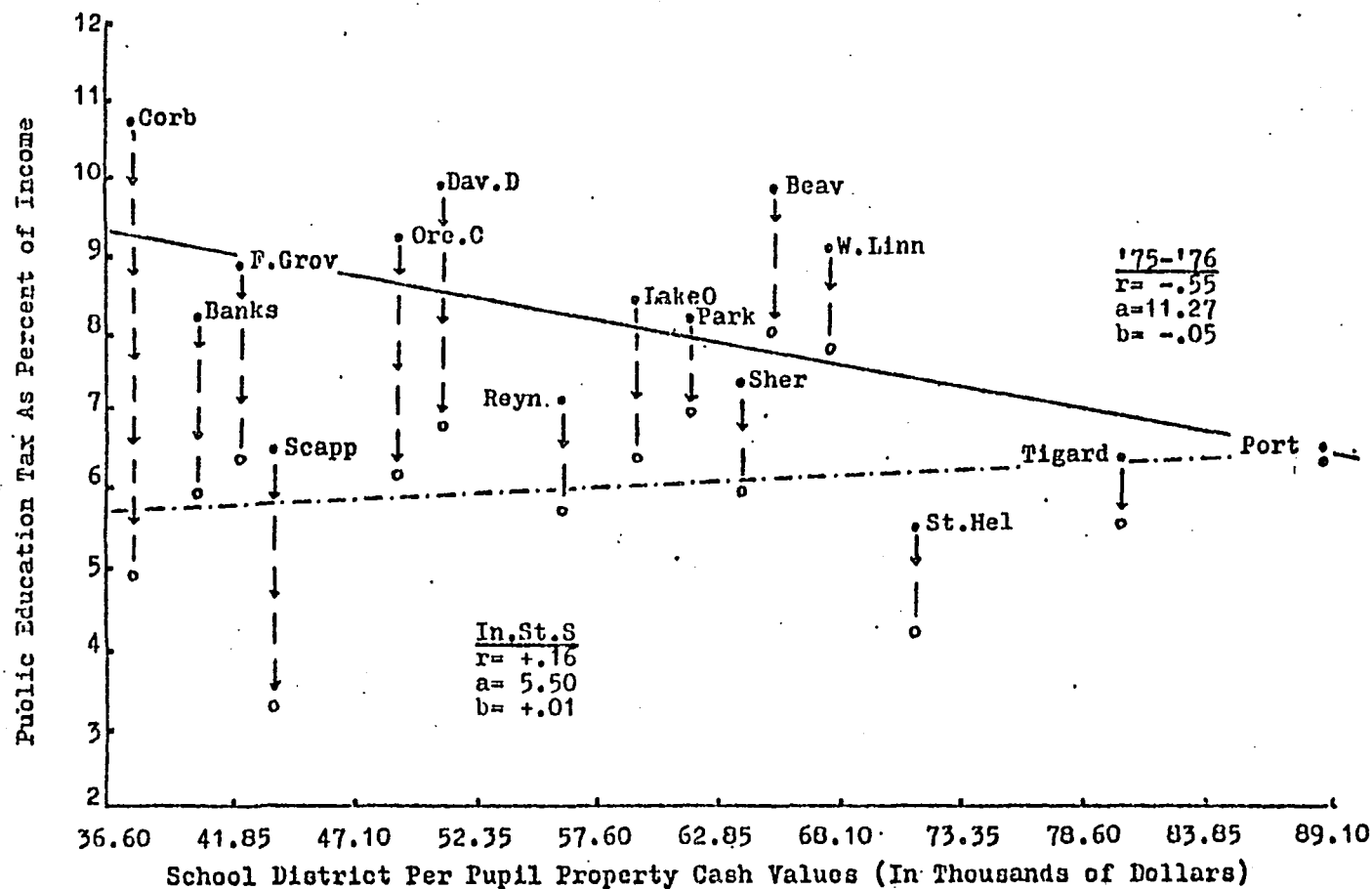


Figure 36. Horizontal tax burden redistribution, Increased State Support (In.St.S.): scattergram of public education tax as percent of income and per pupil property cash values, "Taxpayer-2."

districts. For instance, under the present financing form, the taxpayers in low per pupil property wealth school districts, such as Corbett and Forest Grove, are overburdened with relatively heavier public school taxes. On the other hand, under the increased state support alternative this relatively heavy tax burden would be shifted to school districts with higher per pupil property wealth, such as Beaverton and West Linn. (Figure 36) For example, Table XVI illustrates that for the \$4,000.00 and \$8,000.00 taxpayer income groups the overall tax burden would be lower, relative to the present financing scheme, except in Portland School District. In the \$12,000.00 taxpayer income group, Tigard School District, in addition to Portland, indicates an increased tax burden for this taxpayer income group. In the \$18,000.00 taxpayer income group, two more school districts, St. Helens and West Linn, indicate an increased tax burden. In the \$25,000.00 and \$35,000.00 taxpayer income groups, two more school districts, Parkrose and Sherwood respectively, would be burdened with increased public school taxes. Also, at the \$35,000.00 taxpayer income level six out of 15 sample school districts have an increased burden under this financing alternative.\* This is primarily due to the 33 percent increase in the state's share in funding public

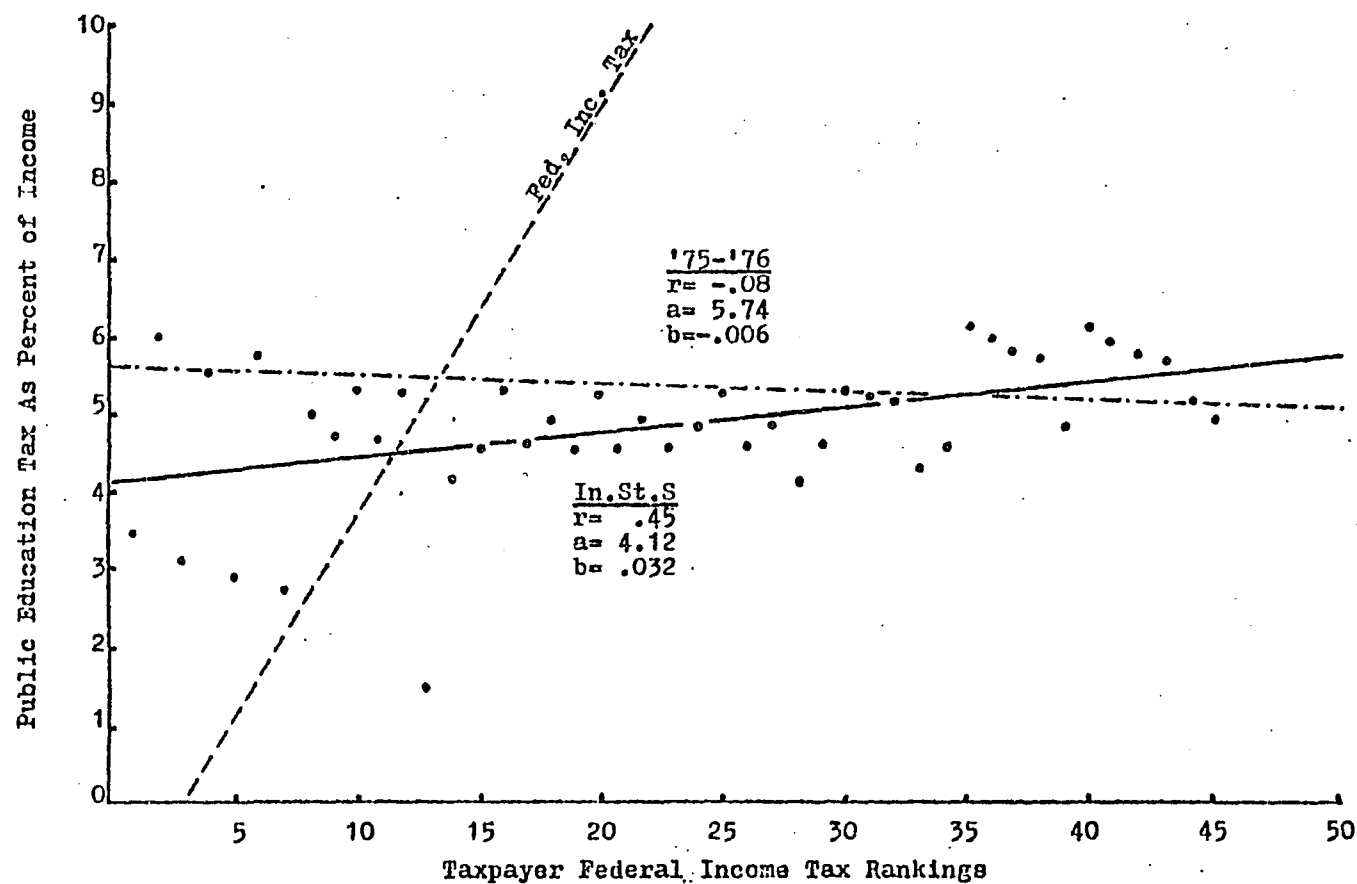
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\*In relative terms, at the \$35,000.00 income level two school districts, Portland and Tigard, appear to have the greatest increases in tax burden.

schools. It is apparent that, relative to the present financing form, a greater portion of funds for public schools would be provided from relatively progressive state income taxes. This would result in higher tax burdens for high income taxpayers residing in school districts with relatively less per pupil state aid.

In order to determine the degree of vertical tax burden redistribution, the sample school districts' composite pattern of public education tax payments, as a percent of income under the increased state support alternative, has been compared to the present vertical tax burden distribution pattern. (Figure 37) Under the increased state financing alternative the level of public education taxation raises the question: how is it possible to finance the public school system with relatively lower levels of revenues? This problem has been recognized by the proponents of this financing alternative. They have suggested the usage of excess state funds and the channelling of federal revenue-sharing funds to compensate for the difference in total revenue capacity in financing public schools resulting from the increased state support.

Analysis of the mean values presented in Table XVI indicates that, relative to the present situation, the overall tax burden would decrease for all sample taxpayer income groups. The magnitude of the tax burden reduction for the income groups would be from 5.57 to 4.04 percent



**Figure 37.** Vertical tax burden redistribution, Increased State Support (In.St.S.): scattergram of public education tax as percent of income and taxpayer federal income tax rankings, sample school districts' composite average.

at \$4,000.00; from 5.64 to 4.50 percent at \$8,000.00; from 5.24 to 4.72 percent at \$12,000.00; from 5.43 to 5.13 percent at \$18,000.00; from 6.06 to 5.75 percent at \$25,000.00; and from 5.94 to 5.70 percent at the \$35,000.00 income level.

Under this financing model the overall tax burden reduction is coupled with a recognizable increase in the level of tax burden progressivity. From a vertical tax burden redistribution perspective, the change in correlation value from -0.08 to -0.45 does not indicate a definite shift toward a relatively more progressive taxation for public education purposes. (Figure 37) However, relative to the federal income tax progressivity level, the increased state financing alternative's public education tax progressivity would not suffice to substantiate a vertical tax burden equity-based public education revenue structure. Nonetheless, the indicated marginal increase in the level of vertical tax burden progressivity would justify further increases in the level of state support to public school systems.

#### Summary of the Major Findings

This chapter presented the local property tax, the state aid distribution and the tax burden redistribution-related findings of the increased state support financing alternative. In accordance with the hypotheses and postulates of this research, and within the parameters and



limitations thereupon, the implementation of the public school financing policy alternative, increased state support, would result, relative to the present financing scheme, in the following changes:

1. Local Public School Property Tax Rates:

a. Local public school property tax rates would decrease considerably for all school districts except Portland.

b. The rural school districts in the Portland metropolitan area would benefit the most in terms of public school property tax reduction

c. Increasing the state support level, coupled with increased state equalization aid, would result in a statistically insignificant positive correlation between property tax rates and per pupil property cash values of school districts.

2. State Aid Distribution:

a. The level of state aid distribution would increase substantially for all school districts except Portland.

b. The rural school districts in the Portland metropolitan area would be the recipients of relatively greater marginal increases of state aid.

c. Under the increased state support alternative there would be a strong inverse correlation between the per pupil state aid distribution to school districts and per pupil property cash values.

### 3. Horizontal Tax Burden Distribution:

a. The inverse relationship between public education tax as a percent of income of equally-circumstanced taxpayers and the per pupil property cash values of school districts would become considerably less correlated.

b. The reduction in variation in tax payment would be insignificant to substantiate a movement toward horizontal tax burden distribution equity.

### 4. Vertical Tax Burden Distribution:

a. Relative to the present situation and the increased state financing alternative, a definite shift toward a relatively more progressive taxation for public education purposes would be realized.

b. It is evident that the increase in the state's share in financing public schools from 30 to 40 percent would not substantiate successful overriding of the regressive impacts of the local school district property taxes on individual taxpayers.

c. Relative to the federal income tax progressivity level, the increased state financing alternative's progressivity would not be strong enough to substantiate a vertical tax burden equity-based public education revenue structure.

## CHAPTER VII

### FULL STATE FUNDING

Under this alternative solution to the problem of financing public schools, the state would provide all of the funds needed to operate primary and secondary public education. Studies by Johns, 1973, Alexander, 1973, Berke, 1974 and Benson, 1974 indicate a strong rationale for supporting full state funding of public education as the solution to the existing inequalities in educational opportunity and the inequities inherent to the existing system of cost allocation.

There are many arguments against the full state assumption of financing public schools. One of the basic arguments is that local control over primary and secondary educational policy-making congruently will be diminished. Full state financing of public schools may curtail the flexibility of school district decision-making by establishing and controlling the level of expenditures.

Opposing full state assumption of public education finance, Harvey Brazer emphasized that total state provision of funds, while allowing local school districts to decide how to spend the state-allocated monies, may not be realistic. (Brazer, 1970, p.245) Additionally, Richard Rossmiller argued that full state funding may eliminate the possibilities for educational experimentation and innovation. (Rossmiller, 1973, pp.68-72) Evidently, under the full state funding alternative, a school district's

ability to innovate and implement community-based programs would not be dependent upon the compliance of local residents to pay for additional taxes. In a rather limited way, the school district's ability to experiment with community-based programs will depend upon the budgetary manipulations within the predetermined level of revenues provided by the state.

Responding to the demand for local control of public schools, some supporters of the full state funding alternative have suggested a relatively moderate financing model that permits limited local supplement. However, it is the contention of many scholars that, if such local supplement is allowed, the existing differences in fiscal capacities between the wealthy and poor school districts may not be completely diminished. (Fleischmann Commission, 1972)

There are several advantages to the full state funding of public schools. Initially, full state funding would reduce and, in time, eliminate the range between the expenditure levels of wealthy and poor school districts.

A systematic effort to raise the level of expenditure in low expenditure districts is likely to be accompanied by monitoring by the state to insure the wise use of additional funds. While this may infringe on traditional local prerogatives, it will probably be necessary to assure state policy makers that school funds provided from the general revenues of the state are not being wasted. (Rossmiller, 1973, p.68)

From an efficiency perspective, full state funding of public schools may increase local control. Under a

centralized financing system the individual school districts' fiscal responsibility would shift from concentration on procedures to raise revenues to concentration on efficient, effective ways to spend the allocated funds. Under the full state funding alternative the primary task of the school district administration would be to produce as much educational output as possible from a given amount of public resources.

The full state funding alternative has a major advantage in terms of tax burden distribution equity. It would reduce the existing horizontal and vertical tax burden inequities among individual taxpayers. Richard Rossmiller explained that full state funding would result in greater reliance on more productive and less regressive taxes and thus would result in greater equity for taxpayers. (Rossmiller, 1973, p.68)

Any movement toward a shift in the financing of public schools from local property to statewide taxes might encounter certain political obstructions. State legislators may not approve of full state funding if it causes substantial increases in the general level of tax levies, or if it imposes new taxes. However, trade-offs are possible to make the full state funding alternative politically more acceptable. For instance, in Oregon expanded income tax may be politically feasible if the local property tax rates could be reduced substantially.

(Rossmiller, 1973, p.47)

The probability of adoption of full state funding of public schools is greater in states wherein a substantial proportion of the revenues are already provided by the state. Presently this is not the case in Oregon. Approximately 30 percent of total public school expenditures is provided by the state. The state's share will be increased to 40 percent during the 1978-1979 school year. Future increases of the state's support level may make the full state funding financing alternative relatively more appealing and politically feasible.

The 1973 Oregon State Legislature, under the guidance of Governor Tom McCall, offered a sweeping reform of Oregon's tax system. In substance, the Legislature approved the bill, terminating the financing of school districts by local property tax revenues primarily derived from residents of the local communities. This legislative enactment would have replaced the local property taxes for educational purposes by increasing other revenue sources, primarily taxes on personal income, income-producing property and business profits. In total, this enactment would have virtually abandoned the local property tax system as a revenue source for financing school district operations.

The McCall Plan was approved by the Oregon State Legislature after heavy debates and politicking. However, subsequent to its amendment to the state constitution,

the voters of Oregon overwhelmingly rejected this policy measure in the May 1973 election. This measure would have shifted the decentralized method of financing public schools to a nearly full state assumption. Loss of local control and uncertainty about the effect of a massive tax shift from property taxes to ability-to-pay taxes led to the defeat of the McCall Plan. (Pierce, 1973, and Benson, 1974)

Presently there are three basic tax approaches to the statewide finance of primary and secondary public education in Oregon. The first financing approach, under the full state funding alternative, would employ a statewide property tax to replace the local property taxes for public schools. This full state financing option would tax, statewide, both residential and income-earning real property to finance public schools. It would employ property tax refund criteria to decrease the tax burden on low income individuals and families.

The second financing approach is based on the original McCall Plan of 1973, without local school district supplement. This option is based on shifting the local financing of public schools to statewide business property tax and to personal income and business profit taxes. This option may also employ property tax refund criteria to ease the noneducation property tax burden on low income families and individuals.

The third approach to finance the full state funding alternative is based totally on personal income and business profit taxes. The state would finance primary and secondary public education from general funds acquired primarily from ability-to-pay taxes. This option may also use the property tax refund criterion to ease the local noneducation property tax burden on low income individuals and families.

#### Income and Statewide Property Taxation

This financing approach under the full state funding alternative is based on a revenue formation system composed of statewide property and income taxation. Under this financing option the statewide property taxation criterion would include taxable residential as well as commercial and industrial properties. A statewide property tax rate for this financing option is estimated to be \$10.00 per thousand dollar property cash value. This figure is somewhat lower than the statewide average of \$13.00 per thousand dollar property cash value. (State of Oregon Department of Education, 1976) This is because this model was structured with the intention of shifting the financing of public schools to income-based ability-to-pay taxes. Therefore, it is estimated that a 26 percent increase in the state income tax schedules would equalize the revenues lost from the reduced level of property taxation



for public schools. Furthermore, under this option the state general funds' share to finance public schools would increase from 33.2 percent to 62.3 percent.

Analysis indicates that under this full state financing option, because of the differences in municipal overburden ratios among the school districts, the property tax refund criterion would still influence the tax burden distribution among the taxpayers. In Table VI (p.101) the sample school districts have been presented in a scale indicating relative municipal overburden situations among districts. As expected, the urban school districts are situated in the high municipal overburden portion of the scale. On the other hand, most of the rural school districts are situated in the low municipal overburden portion of the scale. Such differences in noneducation property tax rates among the local school districts would result in different proportions of the property tax returns being applied to financing public schools. From a tax burden distribution perspective, this would indicate a relatively heavier tax burden on urban taxpayers than on suburban and rural taxpayers. Although the magnitude of the differences in public education tax as a percent of income is minute, it would still result in horizontal tax burden distribution inequities. Figure 38 illustrates that "taxpayer-1" (\$4,000.00 income; five-member family; homeowner) would pay a relatively low -.52 percent of his/her income for public schools if the taxpayer is located in school

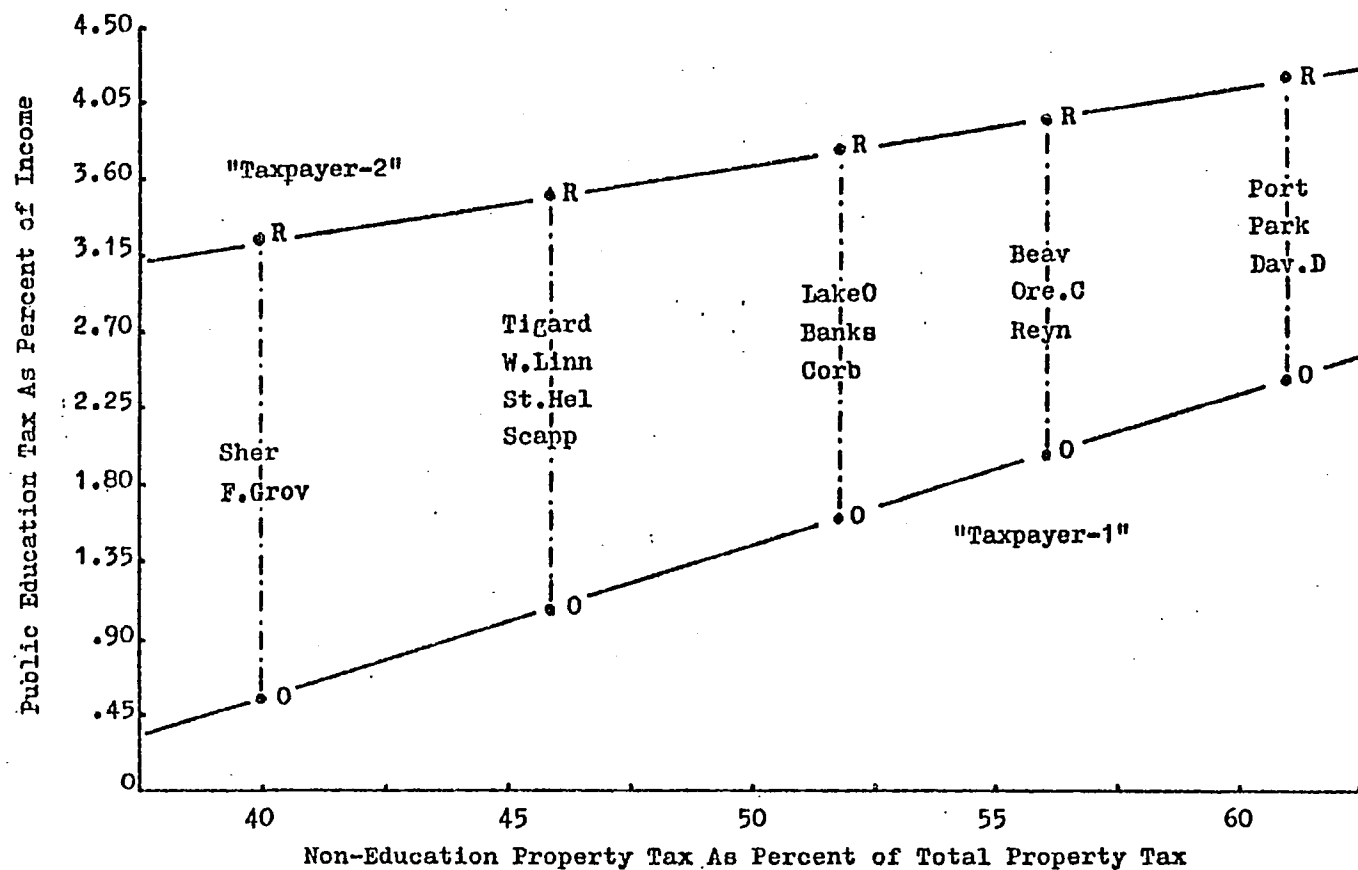


Figure 38. Horizontal tax burden redistribution, full state funding -- income and statewide property taxation: scattergram of public education tax as percent of income and school district non-education property tax as percent of total local property tax, "Taxpayer-1" and "Taxpayer-2."

districts with relatively lower noneducation property tax rates. On the other hand, if the same taxpayer is located in school districts with relatively high noneducation property tax rates, he/she would pay 2.41 percent of his/her income to finance public schools in the state. Also, "taxpayer-2" (\$4,000.00 income; five-member family; renter) would pay a relatively low 3.22 percent of his/her income for public schools if the taxpayer is located in school districts with relatively lower noneducation property tax rates. On the other hand, if the same taxpayer is located in school districts with relatively high noneducation property tax rates, he/she would pay 4.17 percent of his/her income to finance public schools in the state. This particular problem caused by the property tax refund scheme could only be remedied by including the municipal overburden criterion into the property tax refund distribution formula. Furthermore, the renter-owner discrepancy situation, as illustrated in Figure 38, would still be present. This problem could only be remedied by equalizing the differences in the state property tax refunds to owners and renters.

The analysis of the horizontal tax burden distribution among the income groups under this full state financing option indicates that, since the property tax refund criterion is applicable to taxpayers with incomes of \$15,000.00 or less, taxpayers with incomes greater than

\$15,000.00 would be in perfect horizontal tax burden equity situations. (Table XVII) On the other hand, taxpayers with incomes greater than \$15,000.00 would pay different public school taxes, depending on the location's municipal overburden situation. As indicated in Table XVII, the magnitude of the horizontal inequity increases as the level of income decreases. This is due primarily to the marginal increases in property tax refund as the level of income declines.

Comparing the overall level of tax burdens of different income groups under this full state funding option, the level of tax burden, relative to the present financing scheme, would be lower under both the \$4,000.00 and \$8,000.00 income groups. In the \$12,000.00 income group the level of tax burden would be lower for all sample school districts except Portland, Reynolds, Scappoose, Tigard and St. Helens. In the \$18,000.00 income group, five school district taxpayers (David Douglas, Corbett, West Linn, Forest Grove and Beaverton) would be burdened by relatively higher taxes while the rest of the school districts' taxpayers would be burdened with relatively less taxes for public schools. In the \$25,000.00 income level, all school districts (except Corbett and Beaverton) would have their tax burden increased. In the \$35,000.00 income group, relative to the present financing scheme, the Corbett school district would have a lower tax burden. (Table XVII)

TABLE XVII

TAX BURDEN DISTRIBUTION\*--FULL STATE FUNDING:  
INCOME AND STATEWIDE PROPERTY  
TAXATION (FI&P)

Public Education Tax As Percent of Income													
School Districts	\$4,000		\$8,000		\$12,000		\$18,000		\$25,000		\$35,000		
	75-76	FI&P	75-76	FI&P	75-76	FI&P	75-76	FI&P	75-76	FI&P	75-76	FI&P	
Corb.	7.65	- 2.56	7.02	- 4.33	6.34	- 4.76	6.41	- 5.81	7.15	- 6.61	6.97	- 6.75	
Dav.D.	7.12	- 3.12	6.42	- 4.48	5.80	- 4.82	5.87	- 5.81	6.56	- 6.61	6.42	- 6.75	
Beav.	7.07	- 2.80	6.52	- 4.40	5.91	- 4.79	6.00	- 5.81	6.69	- 6.61	6.54	- 6.75	
Ore.C.	6.57	- 2.80	6.19	- 4.40	5.65	- 4.79	5.78	- 5.81	6.44	- 6.61	6.30	- 6.75	
Park.	6.02	- 3.12	5.69	- 4.48	5.22	- 4.82	5.36	- 5.81	5.98	- 6.61	5.87	- 6.75	
W.Linn	6.15	- 2.21	6.19	- 4.24	5.71	- 4.73	5.88	- 5.81	6.56	- 6.61	6.42	- 6.75	
Lake O.	5.87	- 2.56	5.84	- 4.33	5.40	- 4.76	5.57	- 5.81	6.21	- 6.61	6.08	- 6.75	
Banks	5.71	- 2.56	5.74	- 4.33	5.31	- 4.76	5.50	- 5.81	6.13	- 6.61	6.01	- 6.75	
F.Grov.	5.66	- 1.91	6.03	- 4.13	5.67	- 4.69	5.84	- 5.81	6.51	- 6.61	6.37	- 6.75	
Reyn.	4.85	- 2.80	5.06	- 4.40	4.76	- 4.79	4.98	- 5.81	5.56	- 6.61	5.47	- 6.75	
Port.	4.57	- 3.12	4.68	- 4.48	4.40	- 4.82	4.63	- 5.81	5.17	- 6.61	5.09	- 6.75	
Sher.	4.75	- 1.91	5.35	- 4.13	5.07	- 4.69	5.33	- 5.81	5.95	- 6.61	5.84	- 6.75	
Scapp.	4.11	- 2.21	4.87	- 4.24	4.67	- 4.73	4.96	- 5.81	5.54	- 6.61	5.44	- 6.75	
Tigard	4.04	- 2.21	4.74	- 4.24	4.55	- 4.73	4.84	- 5.81	5.40	- 6.61	5.31	- 6.75	
St.Hel.	3.34	- 2.21	4.27	- 4.24	4.18	- 4.73	4.51	- 5.81	5.04	- 6.61	4.97	- 6.75	
Mean	5.57	- 2.52	5.64	- 4.31	5.24	- 4.76	5.43	- 5.81	6.06	- 6.61	5.94	- 6.75	
5.59 - 4.71													
Stand.Dev.	2.17	- 1.15	1.00	- 0.44	0.72	0 0.43	0.64	- 0.25	0.78	- 0.05	0.80	- 0.17	
1.27 - 1.58													

\*By representative taxpayer income groups

From a locational perspective Table XVII illustrates a comparative tax burden advantage for the residents of the most suburban school districts resulting from the implementation of this full state funding option. The full state funding options are designed to equalize the differences in expenditure levels among the school districts. This may diminish the long-term suburban tax burden advantages resulting from the implementation of the full state funding model. For example, Beaverton and West Linn School District's per pupil operational expenditures are \$1,427.00 and \$1,521.00 respectively for the 1975-1976 school year. Under the full state assumption a statewide average of \$1,220.00 per pupil operational expenditure for that school year would be the appropriate standard for comparative reasons. Under these circumstances this would indicate an expenditure loss for these two school districts.\* On the other hand, the rural school districts of Banks and Forest Grove, with per pupil operational expenditures of \$1,070.00 and \$1,112.00 respectively, would end up with increased levels of expenditures.\*\*

However, for the Portland school district the change

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\*This may not necessarily result in lower quality education. However, it may result in more efficient usage of available resources.

\*\*The adoption of a save-harmless clause would protect expenditure advantages of property-rich school districts at the initial stage of full state funding. Since the property-rich school districts could no longer increase expenditures individually, the expenditure effect of full state funding would favor the property-poor districts.

to full state funding appears to be detrimental in terms of levels of expenditure, even though the level of taxes would decrease for the \$4,000.00 and \$8,000.00 income groups. (Table XVII) It should be remembered that the high level of expenditures in urban central school districts does not necessarily indicate a relatively high quality of educational services. Urban centers contain most of the underprivileged and low-income families of the respective metropolitan areas. As illustrated by Seymour Sacks's study (1972) this high concentration of low-income families in urban centers results in increased cost in public education services. The per pupil operational expenditures of \$1,423.00 for the Portland school district in 1975-1976 is above the statewide average. If the special education needs of school districts are taken into account during the distribution of funds to school districts under full state funding, the school districts with a higher number of disadvantaged pupil populations would receive relatively more state funds. From this perspective, Portland School District would still receive the necessary funds to provide the needed extra educational services to the disadvantaged pupils.

Analysis of the mean values presented in Table XVII indicate that, relative to the present situation, the overall tax burden would decrease for the taxpayer group with a \$12,000.00 or less income while it would increase for

the taxpayer group with incomes above \$12,000.00. Evidently, in terms of vertical public education tax burden distributions, this full state funding option would be more progressive, relative to the present financing system.

The vertical tax burden distribution presented in Figure 39 illustrates a strong positive linear relationship between federal income tax rankings of the taxpayers and their public education tax payments under this full state funding option. [ $r=0.91$ ] (Figure 39) Comparative analysis of the regression coefficients of this full state financing option, the present financing system and the previously-presented financing alternatives, indicates that under the full state funding (income and statewide property taxation) the vertical tax burden distribution structure would become considerably progressive. (Figure 39) Therefore the shift to statewide taxation, when combined with reduced dependence on the property tax by increasing the allocation of income tax-based funds to finance public schools, would make the state public education finance a relatively progressive revenue system.

#### Income and Statewide Business Property Taxation\*

This financing approach under the full state funding alternative is based on a revenue formation system composed

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\*This full state financing option is based on Governor Tom McCall's Tax Reform Plan of 1973. (Office of the Governor, 1972 and Legislative Revenue Office, 1976)



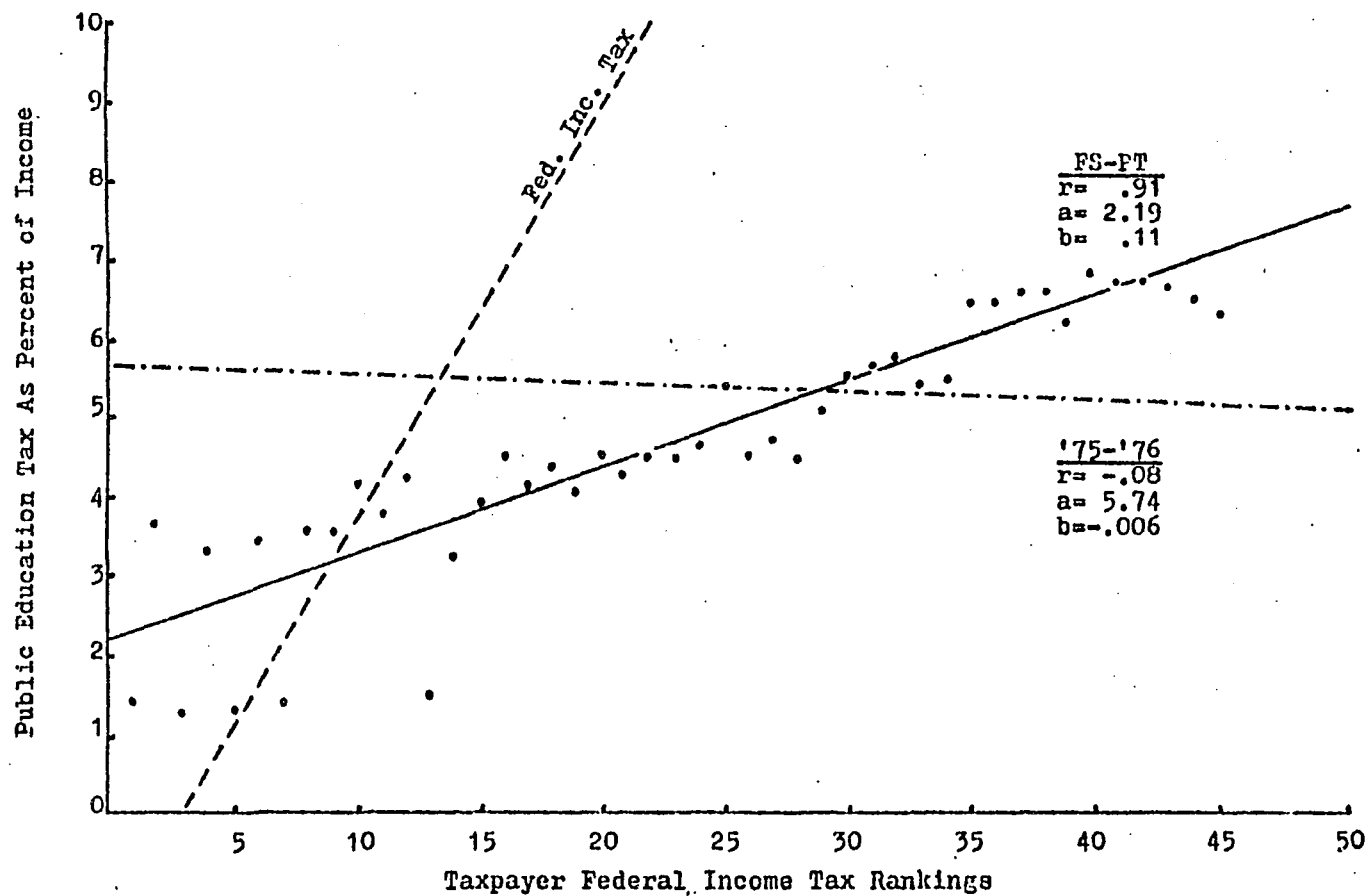


Figure 39. Vertical tax burden redistribution, Full State Funding--Income and State-wide Property Taxation (FS-PT): scattergram of public education tax as percent of income and federal income tax rankings, sample school district municipal overburden groups' composite average.

of personal and business income taxation and statewide business property taxation. Under this full state financing option, the statewide property taxation would exclude owner-occupied residential properties. In order to equalize the resultant excess tax burden on the renter-occupied residential properties, which may result in relatively higher residential rent values, the state may employ, in addition to the ongoing property tax refund scheme, a renter refund criterion. This financing option's resultant tax burden distribution has been calculated within this assumption of the state's adopting a renter property tax refund criterion. Also, this financing model has been structured with the intention of shifting the financing of public schools to income-based ability-to-pay taxes. Therefore, it is estimated that an appropriate increase in the state income tax schedules (35 percent) would equalize the revenues lost from a reduced level of property taxation for public schools. Also, it is estimated that, under this option, the state funds' share to finance public schools would increase from 33.2 percent 62.3 percent.

The analysis of the horizontal tax burden distribution among the equally-circumstanced taxpayers under this full state financing option indicates that there would be no horizontal tax burden distribution inequities. It is illustrated in Figure 40 that the straight horizontal

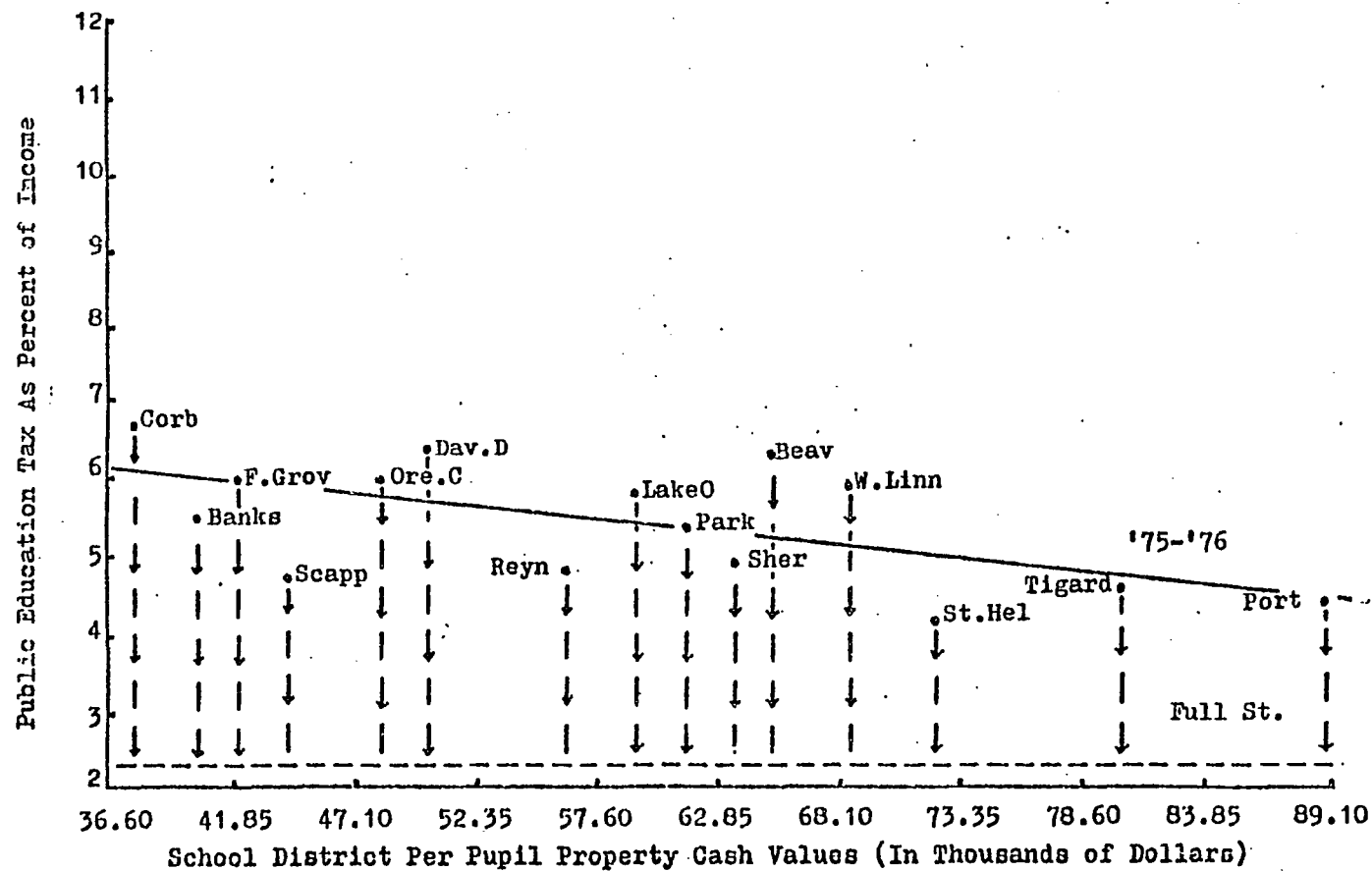


Figure 40. Horizontal tax burden redistribution, full state funding -- income and statewide business property taxation: scattergram of public education tax as percent of income and per pupil property cash values, "Taxpayer-17."

regression line indicates a perfect horizontal tax burden distribution situation. Also, it is exemplified in the same figure that "taxpayer-17" (\$12,000.00 income; five-member family; owner) would become better off, in terms of public school tax payments, in all of the sample school districts. Evidently, this particular taxpayer's tax payments would be lower in all of the sample school districts under this full state funding option. However, it is illustrated in Table XVIII that the magnitude of the reduction in tax burden for the \$12,000.00 income group varies from a low of 4.18 to 3.01 in St. Helens to a high of 6.34 to 3.02 in Corbett School District. The distributive pattern of the tax burden reduction indicates that the suburban taxpayers, relative to their equally-circumstanced counterparts in urban and rural school districts, would be better off under this full state funding option. This has been further illustrated in the \$35,000.00 income group presented in Table XVIII. At this high income level, tax payments to finance public schools would increase for taxpayers residing primarily in urban and rural school districts, and would decrease for those taxpayers residing in suburban school districts. From a locational perspective, this may indicate comparative tax burden advantages for the residents of most suburban school districts resulting from the implementation of this full state funding option. However, the long-term effects of this tax burden advantage would be balanced by equalized

TABLE XVIII

TAX BURDEN DISTRIBUTION\*--FULL STATE FUNDING:  
INCOME AND STATEWIDE BUSINESS PROPERTY  
TAXATION (FIBP)

Public Education Tax As Percent of Income												
School Districts	\$4,000		\$8,000		\$12,000		\$18,000		\$25,000		\$35,000	
	75-76	FIBP	75-76	FIBP	75-76	FIBP	75-76	FIBP	75-76	FIBP	75-76	FIBP
Corb.	7.65	- 0.77	7.02	- 2.39	6.34	- 3.02	6.41	- 4.30	7.15	- 5.36	6.97	- 6.14
Dav.D.	7.12	- 0.77	6.42	- 2.39	5.80	- 3.02	5.87	- 4.30	6.56	- 5.36	6.42	- 6.14
Beav.	7.07	- 0.77	6.52	- 2.39	5.91	- 3.02	6.00	- 4.30	6.69	- 5.36	6.54	- 6.14
Ore.C.	6.57	- 0.77	6.19	- 2.39	5.65	- 3.02	5.78	- 4.30	6.44	- 5.36	6.30	- 6.14
Park.	6.02	- 0.77	5.69	- 2.39	5.22	- 3.02	5.36	- 4.30	5.98	- 5.36	5.87	- 6.14
W.Linn	6.15	- 0.77	6.19	- 2.39	5.71	- 3.02	5.88	- 4.30	6.56	- 5.36	6.42	- 6.14
Lake O.	5.87	- 0.77	5.84	- 2.39	5.40	- 3.02	5.57	- 4.30	6.21	- 5.36	6.08	- 6.14
Banks	5.71	- 0.77	5.74	- 2.39	5.31	- 3.02	5.50	- 4.30	6.13	- 5.36	6.01	- 6.14
F.Grov.	5.66	- 0.77	6.03	- 2.39	5.67	- 3.02	5.84	- 4.30	6.51	- 5.36	6.37	- 6.14
Reyn.	4.85	- 0.77	5.06	- 2.39	4.76	- 3.02	4.98	- 4.30	5.56	- 5.36	5.47	- 6.14
Port.	4.57	- 0.77	4.68	- 2.39	4.40	- 3.02	4.63	- 4.30	5.17	- 5.36	5.09	- 6.14
Sher.	4.75	- 0.77	5.35	- 2.39	5.07	- 3.02	5.33	- 4.30	5.95	- 5.36	5.84	- 6.14
Scapp.	4.11	- 0.77	4.87	- 2.39	4.67	- 3.02	4.96	- 4.30	5.54	- 5.36	5.44	- 6.14
Tigard	4.04	- 0.77	4.74	- 2.39	4.55	- 3.02	4.84	- 4.30	5.40	- 5.36	5.31	- 6.14
St.Hel.	3.34	- 0.77	4.27	- 2.39	4.18	- 3.02	4.51	- 4.30	5.04	- 5.36	4.97	- 6.14
Mean	5.57	- 0.77	5.64	- 2.39	5.24	- 3.02	5.43	- 4.30	6.06	- 5.36	5.94	- 6.14
Stand.Dev.	5.59 - 3.12		1.00 - 0.81		0.72 - 0.74		0.64 - 0.78		0.78 - 0.56		0.80 - 0.40	
	1.27 - 1.91											

\*By representative taxpayer income groups

school district per pupil expenditure levels.

Analysis of the mean values presented in Table XVIII indicate that, relative to the present situation, the overall tax burden would decrease for all sample income groups except the \$35,000.00 income level. The magnitude of the tax burden reduction for the remaining income groups would be from 5.57 to 0.77 percent at the \$4,000.00 level; from 5.64 to 2.39 percent at the \$8,000.00 level; from 5.24 to 3.07 percent at the \$12,000.00 level; from 5.43 to 4.30 percent at the \$18,000.00 level; and from 6.06 to 5.36 percent at the \$25,000.00 income level. The increase in the tax burden for the \$35,000.00 income group would be from 5.94 to 6.14 percent of taxable income.

Relative to the present financing system, this full state funding option would be more progressive in terms of vertical tax burden distributions. The vertical tax burden distributions illustrated in Figure 41 indicate strong positive correlation between federal income tax rankings of the taxpayers and their public education tax payments under this full state funding option.

[ $r=0.99$ ] (Figure 41) A comparative analysis of the regression coefficients of this full state financing option, the present financing system and the previously-presented financing alternatives indicates that under full state funding (income and statewide business property taxation) the vertical tax burden distribution structure would

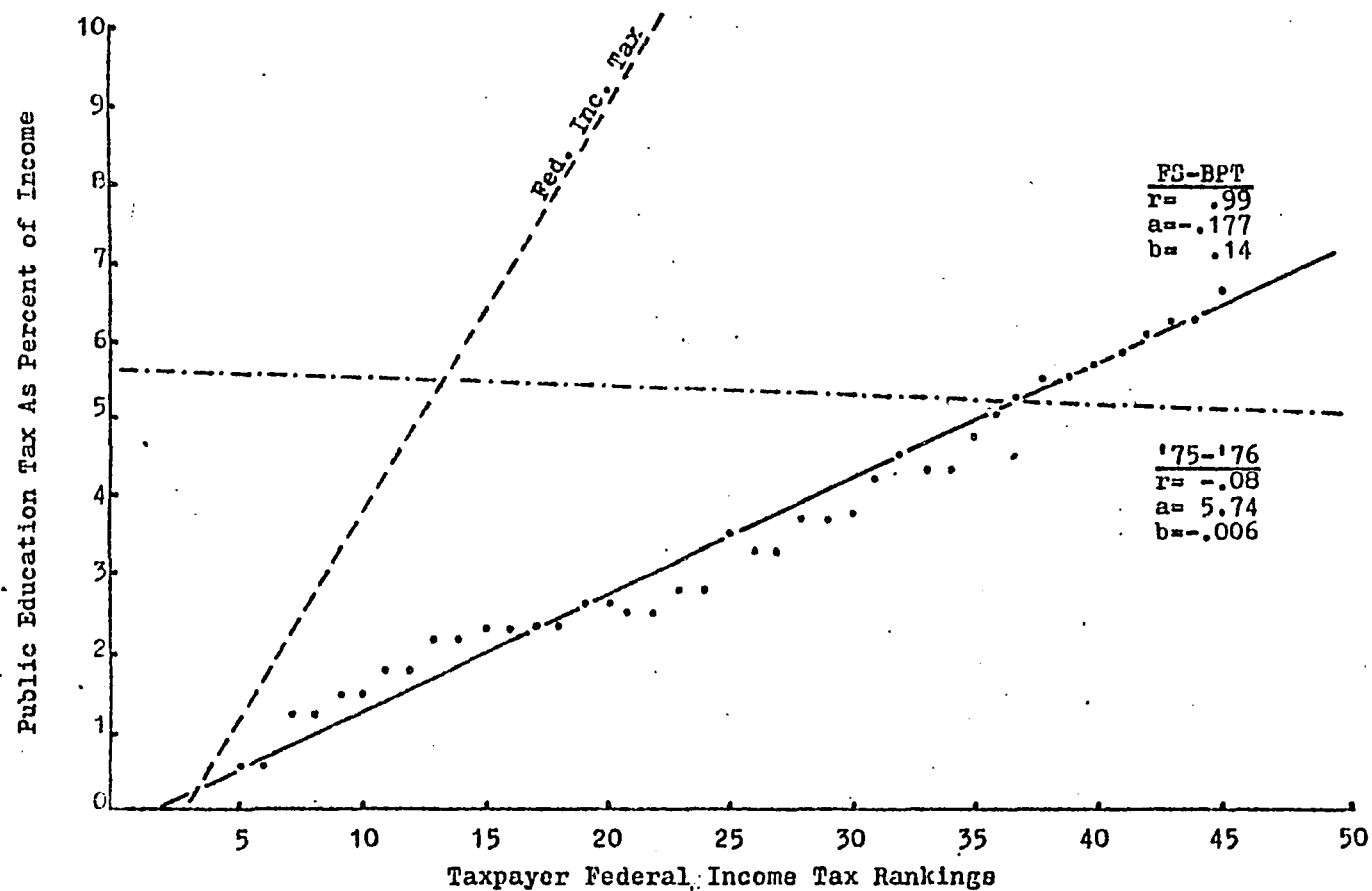


Figure 41. Vertical tax burden redistribution, Full State Funding--Income and Statewide Business Property Taxation (FS-BPT): scattergram of public education tax as percent of income and federal income tax rankings.

become considerably progressive. (Figure 41) Therefore the shift to statewide business property taxation and increased dependence on the income taxes to finance public schools would make Oregon's public education finance a relatively progressive revenue system.

#### Income Taxation Only

This financing approach under the full state funding alternative is based on a revenue formation system composed of personal and business income taxation. Under this full state financing option, there would be no property taxation, business or residential, to finance public schools. Funds to finance public schools in the state would be provided from state, personal and business income tax sources. This full state financing model has been structured with the intention of completely shifting the financing of public schools to income-based ability-to-pay taxes. Therefore, an appropriate increase in the state income tax schedules (92 percent) would equalize the lost property tax revenues. It is also estimated that under this full state funding option the state funds' share to finance public schools would increase from 33.2 percent to 62.3 percent.

The analysis of the horizontal tax burden distribution among the equally-circumstanced taxpayers under this full state financing option indicates that there would be no horizontal tax burden distribution inequities. It



is illustrated in Figure 42 that the straight horizontal regression line indicates a perfect horizontal tax burden distribution situation. As exemplified in the same figure, "taxpayer-17" (\$12,000.00 income; five-member family; owner) is better off in terms of public school tax payments in all of the sample school districts. Evidently this particular taxpayer's tax payments would be lower in all of the sample school districts under this full state funding option. However, as illustrated in Table XIX, the magnitude of the reduction in tax burden for the \$12,000.00 income group varies from a low of 4.18 (in Corbett School District). The distributive pattern of the tax burden reduction indicates that the suburban taxpayers, relative to their equally-circumstanced counterparts in urban and rural school districts, would be better off under this full state funding option. This has been further illustrated in the \$35,000.00 income group presented in Table XIX. At this high income level tax payments to finance public schools would increase for all taxpayers residing in the sample school districts. The magnitude of the increase, however, would vary from a low of 6.97 to 6.99 (in Corbett) to a high of 4.97 to 6.99 (in St. Helens School District). At this high income level, tax payments to finance public schools would increase relatively more for the taxpayers located in urban and rural school districts, and relatively less for the taxpayers residing

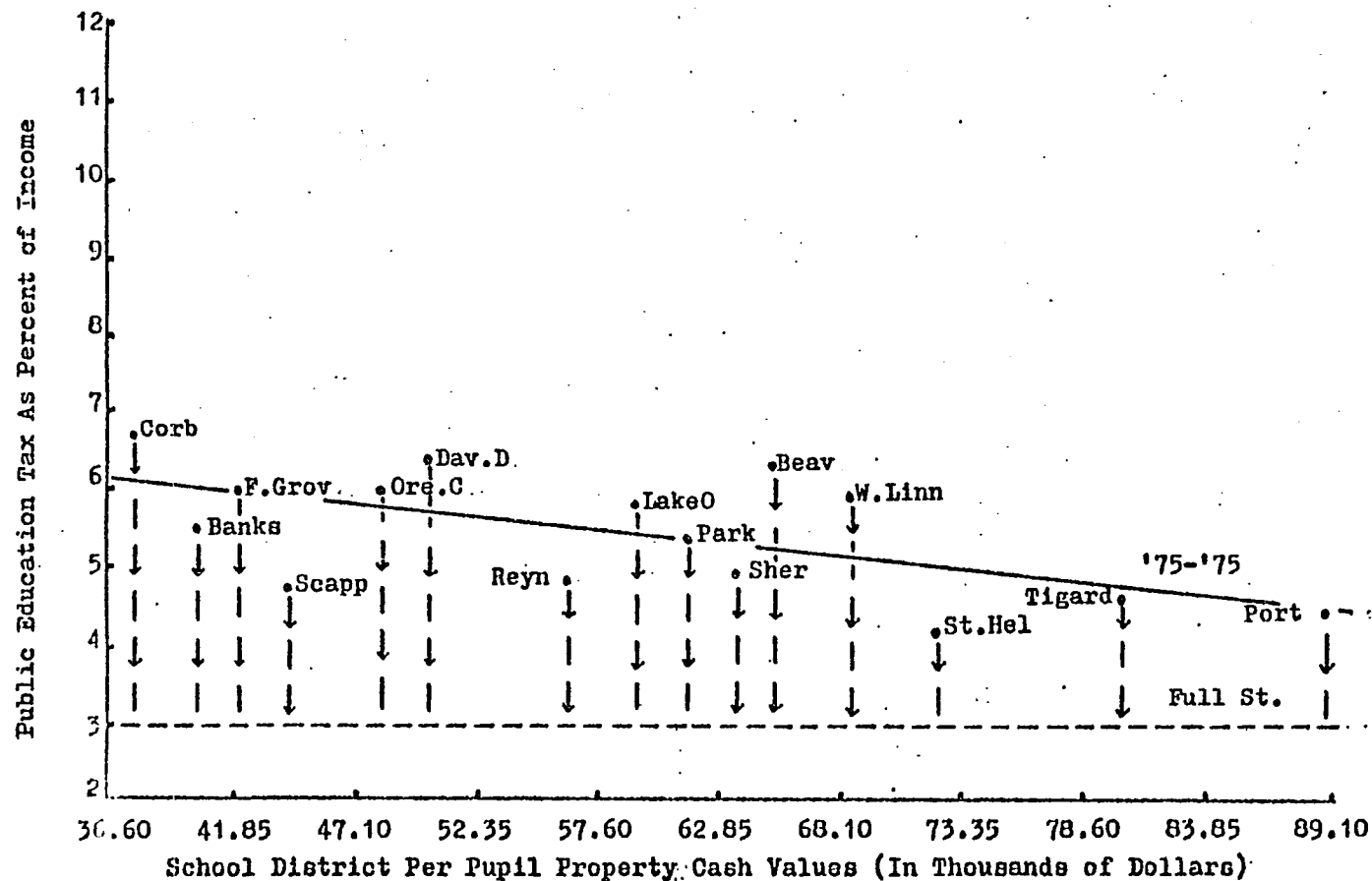


Figure 42. Horizontal tax burden redistribution, full state funding -- income taxation only: scattergram of public education tax as percent of income and per pupil property cash values, "Taxpayer-17."

TABLE XIX

TAX BURDEN DISTRIBUTION\*---FULL STATE FUNDING:  
INCOME TAXATION ONLY (FI)

School Districts	Public Education Tax As Percent of Income											
	\$4,000		\$8,000		\$12,000		\$18,000		\$25,000		\$35,000	
	75-76	FI	75-76	FI	75-76	FI	75-76	FI	75-76	FI	75-76	FI
Corb.	7.65	- 0.95	7.02	- 3.15	6.34	- 4.13	6.41	- 5.71	7.15	- 6.62	6.97	- 6.99
Dav.D.	7.12	- 0.95	6.42	- 3.15	5.80	- 4.13	5.87	- 5.71	6.56	- 6.62	6.42	- 6.99
Beav.	7.07	- 0.95	6.52	- 3.15	5.91	- 4.13	6.00	- 5.71	6.69	- 6.62	6.54	- 6.99
Ore.C.	6.57	- 0.95	6.19	- 3.15	5.65	- 4.13	5.78	- 5.71	6.44	- 6.62	6.30	- 6.99
Park.	6.02	- 0.95	5.69	- 3.15	5.22	- 4.13	5.36	- 5.71	5.98	- 6.62	5.87	- 6.99
W.Linn	6.15	- 0.95	6.19	- 3.15	5.71	- 4.13	5.88	- 5.71	6.56	- 6.62	6.42	- 6.99
Lake O.	5.87	- 0.95	5.84	- 3.15	5.40	- 4.13	5.57	- 5.71	6.21	- 6.62	6.08	- 6.99
Banks	5.71	- 0.95	5.74	- 3.15	5.31	- 4.13	5.50	- 5.71	6.13	- 6.62	6.01	- 6.99
F.Grov.	5.66	- 0.95	6.03	- 3.15	5.67	- 4.13	5.84	- 5.71	6.51	- 6.62	6.37	- 6.99
Reyn.	4.85	- 0.95	5.06	- 3.15	4.76	- 4.13	4.98	- 5.71	5.56	- 6.62	5.47	- 6.99
Port.	4.57	- 0.95	4.68	- 3.15	4.40	- 4.13	4.63	- 5.71	5.17	- 6.62	5.09	- 6.99
Sher.	4.75	- 0.95	5.35	- 3.15	5.07	- 4.13	5.33	- 5.71	5.95	- 6.62	5.84	- 6.99
Scapp.	4.11	- 0.95	4.87	- 3.15	4.67	- 4.13	4.96	- 5.71	5.54	- 6.62	5.44	- 6.99
Tigard	4.04	- 0.95	4.74	- 3.15	4.55	- 4.13	4.84	- 5.71	5.40	- 6.62	5.31	- 6.99
St.Hel.	3.34	- 0.95	4.27	- 3.15	4.18	- 4.13	4.51	- 5.71	5.04	- 6.62	4.97	- 6.99
Mean	5.57	- 0.95	5.64	- 3.15	5.24	- 4.13	5.43	- 5.71	6.06	- 6.62	5.94	- 6.99
5.59 - 3.98												
Stand.Dev.	2.17	- 1.07	1.00	- 1.20	0.72	0 1.05	0.64	- 0.94	0.78	- 0.54	0.80	- 0.27
1.27 - 2.30												

\*By representative taxpayer income groups

in suburban school districts. From a locational perspective this may indicate initial comparative tax burden advantages for the residents of most suburban school districts resulting from the implementation of this full state funding option. However, the long-term effects of this tax burden advantage would be balanced by equalized school district per pupil expenditure levels.

Analysis of the mean values presented in Table XIX indicate that, relative to the present situation, the overall tax burden would decrease for the \$4,000.00, \$8,000.00 and \$12,000.00 income groups. The magnitude of the tax burden reduction for these three income groups would be from 5.57 to 0.95 percent at the \$4,000.00 level; from 5.64 to 3.13 percent at the \$8,000.00 level; and from 5.24 to 4.13 percent at the \$12,000.00 income level. On the other hand, for the upper income groups, relative to the present situation the overall tax burden would increase. The magnitude of this tax burden increase would be from 5.43 to 5.71 percent at the \$18,000.00 level; from 6.06 to 6.62 percent at the \$25,000.00 level; and from 5.94 to 6.99 percent at the \$35,000.00 income level. (Table XIX) Evidently, relative to the present financing system the full state funding option based on the ability-to-pay taxes would become increasingly progressive in terms of vertical tax burden distribution.

The vertical tax burden distributions presented in Figure 43 indicate a strong positive correlation between

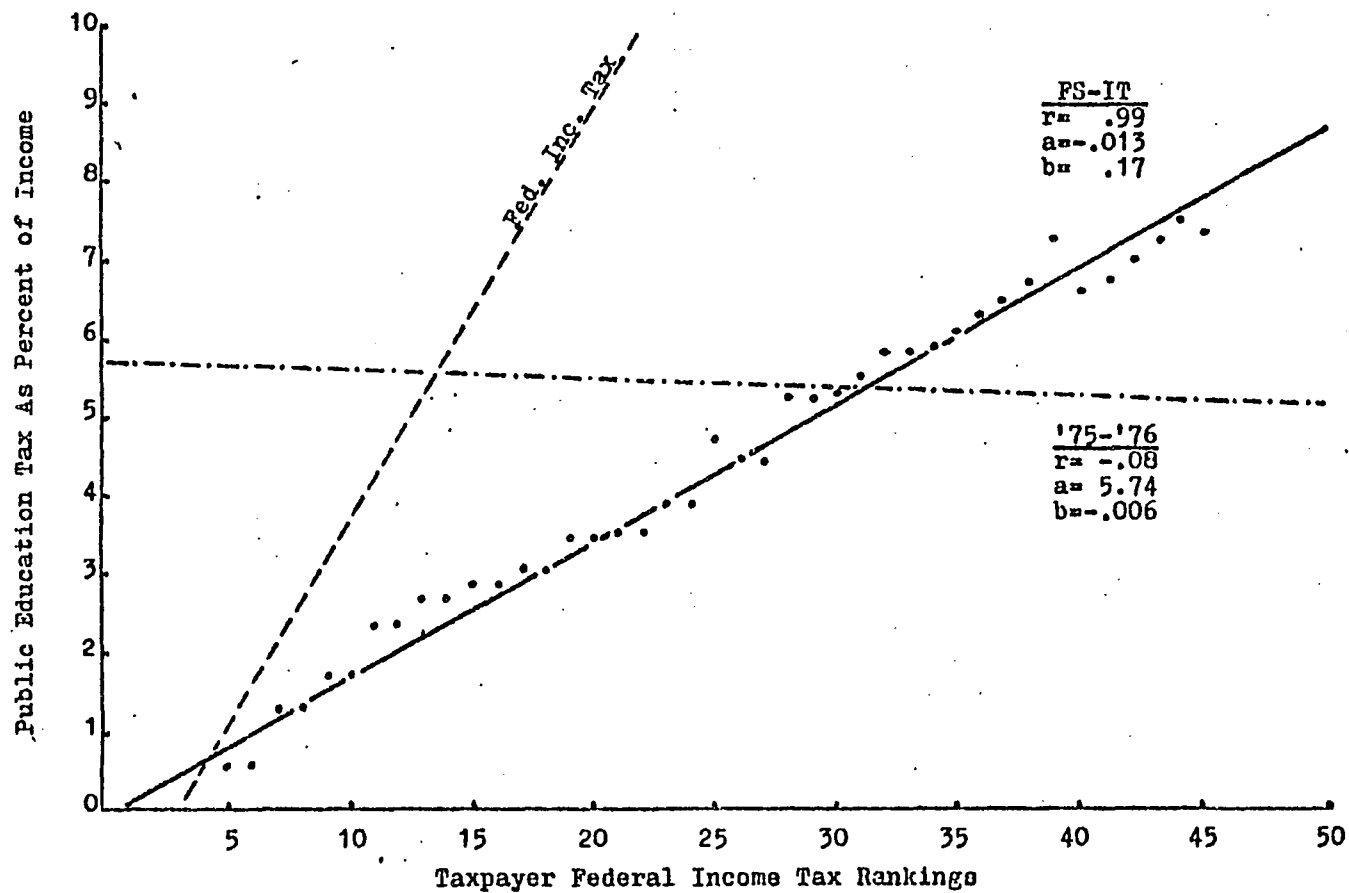


Figure 43. Vertical tax burden redistribution, Full State Funding--Income Taxation Only (FS-IT): scattergram of public education tax as percent of income and federal income tax rankings.

federal income tax rankings of the taxpayers and their public education tax payments under this full state funding option.  $\sqrt{r}=0.997$  (Figure 43) A comparative analysis of the regression coefficients of this full state financing option, the present financing system and the previously-presented financing alternatives indicates that under the full state funding (income taxation only) the vertical tax burden distribution structure would become considerably progressive. (Figure 43) Therefore, the shift to statewide business and personal income taxation would make the State of Oregon's public education finance a relatively progressive revenue system.

### Summary of the Major Findings

This chapter presented the tax burden redistribution-related findings of the three financing options under the full state funding alternative. In accordance with the hypotheses and postulates of this research, and within the parameters and limitations thereupon, the implementation of this public school finance policy alternative (full state funding of public schools) would redistribute the tax burden among individual taxpayers and cause the following relative changes in the existing horizontal and vertical tax burden distribution structures:

1. Income and Statewide Property Taxation--relative to the present situation and to the previously-presented financing alternatives:

a. The horizontal tax burden distribution would be minimized.

b. The vertical tax burden distribution, in terms of income and family size, would become more progressive.

2. Income and Statewide Business Property Taxation--relative to the present situation and to the previously-presented financing alternatives:

a. The horizontal tax burden distribution inequities would become nonexistent.

b. The vertical tax burden distribution, in terms of income and family size, would become more progressive.

3. Income Taxation Only--relative to the present situation and to the previously-presented financing alternatives:

a. The horizontal tax burden distribution inequities would become nonexistent.

b. The vertical tax burden distribution, in terms of income and family size, would become more progressive.

## CHAPTER VIII

### COMPARATIVE ANALYSES OF FINANCING ALTERNATIVES

The school finance alternatives considered by this study have been presented under four broad categories: (a) the present system (1975-1976); (b) reforms within the present system; (c) increased state support; and (d) full state funding. Each category has been individually illustrated, detailed and analyzed in chapters four through seven. In this chapter the financing alternatives considered by this study, inclusive of the present 1975-1976 financing scheme, will be examined under the following four categories: school district property tax rates; state aid to school districts; horizontal tax burden distribution; and vertical tax burden distribution.

#### 1. School District Property Tax Rates\*

Under the present financing scheme (1975-1976) the property tax rates among the school districts vary considerably. The data indicates that the school district property tax rates are relatively higher for property-poor school districts and relatively lower for property rich school districts. (Figure 2, p.97) Also, Table XX illustrates that the level of school district property tax rates are greatly determined by per pupil property cash values of school districts. This indicates that the greater the per

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\*Since there would be no school district level taxation under the full state funding alternative, only the reform within the present system and the increased state support financing alternatives are analyzed in this section.



TABLE XX

STATISTICAL INDICATORS--INDEPENDENT VARIABLE: SCHOOL  
DISTRICT PER PUPIL PROPERTY CASH VALUES

Public School Finance Alternatives	D e p e n d e n t V a r i a b l e s					
	School District Property Tax Rates		Per Pupil State Aid		Public Education Tax as % of Income-"Taxpayer-2"*	
	r	b	r	b	r	b
Present('75-76)	-.61	-.11	-.78	-3.02	-.55	-.05
<u>Reform Within Present</u>						
a.Foundation Phase- In Plan	-.54	-.08	-.84	-6.82	-.46	-.04
b.Local Guaranteed Yield Plan	-.22**	-.03	-.85	-7.26	-.17**	-.01
c.Total Tax Effort Equalization Plan	+.32**	+.05	-.90	-9.41	+.32**	+.03
d.Available Wealth Equalization Plan	-.49	-.09	-.52	-4.90	-.48	-.04
Increased State Support	+.25**	+.04	-.77	-7.79	+.16**	+.01

\*Horizontal Tax Burden Distribution

\*\*Not significant at the 0.05 significance level

pupil property wealth of a school district, the smaller its property tax rate.

Comparative analysis of the school district property tax rates among the financing alternatives considered by this study indicates that two of the reforms within the present system plans--foundation phase-in and available wealth equalization--would not cause significant changes in the level of school district property tax rates. (Figures 17 and 29) Under both these models the change in the regression and correlation coefficient values indicating the relationship between the property tax rates and the per pupil property cash values is minimal. Under these two reforms within the present financing plans, school district property tax rates would still be determined by per pupil property cash values of school districts. (Table XX) Consequently, school districts with relatively higher per pupil property values would exert relatively lower tax efforts.

Under the local guaranteed yield and total tax effort equalization plans the level of property taxes, relative to the present scheme, would become considerably lower for property-poor school districts; there would be no significant changes for property-rich school districts. (Figures 21 and 25) The change in the regression and correlation coefficient values indicates that the relationship between the property tax rates and the per pupil property cash values of school districts would become statistically

insignificant under the local guaranteed yield and total tax effort equalization plans. Therefore, under these plans school district property tax rates would not be determined by per pupil property cash values of school districts.

The analysis indicates that the school district property tax rates under the reforms within the present system alternative plans, except the total tax effort equalization plan, do not change significantly to indicate a direction of property tax rate equalization among school districts with different per pupil property wealth. From a comparative perspective, the most obvious change in the level of property tax rates would occur under the total tax effort equalization plan. (Figure 25) Under this financing plan the level of property taxes would be considerably lower for all rural and most suburban school districts. The reduction in property tax rates among urban center school districts would not be considerable.\* Furthermore, contrary to the present situation, under the total tax effort equalization plan the level of property tax rates would not be based on the per pupil property cash values of school districts. (Table XX) Evidently, under the total tax effort equalization plan the level and variations of property tax rates among school districts

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\*Contrary to its purpose, the implementation of the total tax effort plan may not result in considerable property tax reductions for the urban center school districts.

would be determined to a greater extent by the state aid distribution.

Under the increased state support financing alternative, the level of property tax rates would become considerably lower, relative to the present system, for the property-poor school districts and slightly lower for property-rich school districts. (Figure 33) The change in the regression and correlation coefficient values indicates that under the increased state support alternative the relationship between property tax rates and the per pupil property cash values of school districts would not be statistically significant. Therefore, contrary to the present situation, under the increased state support alternative the level of property rates would not be determined by per pupil property cash values of school districts. (Table XX) Evidently, under this financing alternative the level and variations of property tax rates among school districts would be determined to a greater extent by the state aid distributions.

## 2. State Aid Distribution to School Districts\*

Under the 1975-1976 financing scheme per pupil state aid distribution to school districts varied considerably.

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\*Under the full state funding alternative there would be no state aid distribution criterion as is presently operating. Under full state alternatives state monies would be distributed to school districts, not as grants or aids, but as total funds to operate public schools. For that reason only the reform within the present system and the increased state support financing alternatives are analyzed under this section.

Figure 5 illustrates that the level of per pupil state aid is relatively higher for property-poor school districts and relatively lower for property-rich school districts. Also, the pattern of state aid distribution is determined by per pupil property cash values of school districts. (Table XX)

Comparative analysis of state aid distribution to school districts under the financing alternatives considered by this study (except the full state funding) indicates that the overall level of state aid to school districts, relative to the 1975-1976 financing scheme, would increase considerably. Under all of the financing alternatives the increase in state aid is substantial for property-poor and minimal for property-rich school districts. (Figures 18, 22, 26, 30 and 35) In terms of equalization of differences in property-based taxable capacities of school districts, all of the alternatives, except the available wealth equalization plan, would accomplish their objectives to varying degrees. Table XX and Figure 30 illustrate that the available wealth equalization plan is least capable of accomplishing a property wealth-based state aid distribution. The regression coefficient indicates that under the available wealth equalization plan the state aid distribution criterion is determined to a lesser extent by the per pupil property cash values of school districts. Concomitantly, under this financing plan the property-rich school districts would get, relative

to the present financing scheme, more per pupil state aid.

Other reforms within the present system plans, especially the total tax effort equalization plan, show that the state aid distribution pattern would be increasingly determined by the per pupil property cash values of school districts. (Table XX and Figure 26) The same situation prevails under the increased state support financing alternative. Relative to the present scheme, under the increased state support alternative the higher the per pupil property cash values a school district has, the lower the level of state aid it would receive. If the property wealth of school districts is the valid indicator of the wealth of its residents, the objectives of these two financing alternatives would be the appropriate policy choice to equalize the differences in taxable capacities of school districts. However, there is a current controversy over the issue of school district wealth. This research and studies by Gatti (1976) and Ladd (1975) indicate that the level of school districts' property wealth does not correlate with their level of aggregate income. Acceptance of income as a measurement of school district wealth and its usage in conjunction with property wealth may result in a different and more equitable criterion by which to distribute state funds to school districts.\*

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\*Presently the Oregon Department of Education and the Legislative Revenue Office are conducting research to study the possibility of combined usage of income and property as the indicators of school districts' wealth.

### 3. Horizontal Tax Burden Distribution

Comparative analysis of horizontal tax burden distribution indicators among the school financing alternatives considered by this study is based on the following two analytical categories: (1) the magnitude of the tax burden variations among equally-circumstanced taxpayers (Figure 44); and (2) the extent to which the horizontal tax burden distribution pattern is based on the per pupil property cash values of school districts. (Table XX)

As previously discussed, analysis indicates that there exist considerable horizontal tax burden distribution inequities under the present financing scheme (1975-1976). (Figures 9, 10 and 44) Furthermore, the data indicates an inverse correlation between per pupil property cash values and the pattern of horizontal tax burden distribution, measured by public education tax as percent of income of equally-circumstanced taxpayers. (Table XX) Although the strength of this relationship is not substantial, it still connotes variations in equally-circumstanced taxpayers' public education tax burden according to the property wealth of the school districts in which they reside. From a locational perspective this suggests that residents of property-rich school districts pay less for public education services in the state than do their equally-circumstanced counterparts in property-poor school districts. (Table XX and Figure 9)

An analysis of the changes in horizontal tax burden distribution brought about by alternative school financing models indicates that all of the reform within the present system plans would bring no significant changes to the existing horizontal tax burden inequities. (Figure 44) Therefore, the reform within the present system alternative plans would not reduce the existing tax burden inequities among the equally-circumstanced taxpayers.

Under both the local guaranteed yield and total tax effort equalization plans the inverse linear relationship between the horizontal tax burden distribution and per pupil property cash values would become statistically insignificant. (Table XX and Figure 23) Concurrently, under both these reform plans the public education taxes as percent of income of equally-circumstanced taxpayers would not be determined by per pupil property cash values of school districts. The changes in correlation and regression coefficient values under these two financing plans result from the increased level of state equalization aid to property-poor school districts.

Analysis of horizontal tax burden distribution under the increased state support alternative indicates that, relative to the present situation, the variations in public education tax burdens among equally-circumstanced taxpayers would be relatively lower. (Figure 44) This reduction of horizontal tax burden inequities, however insignificant, results from the increased level of income



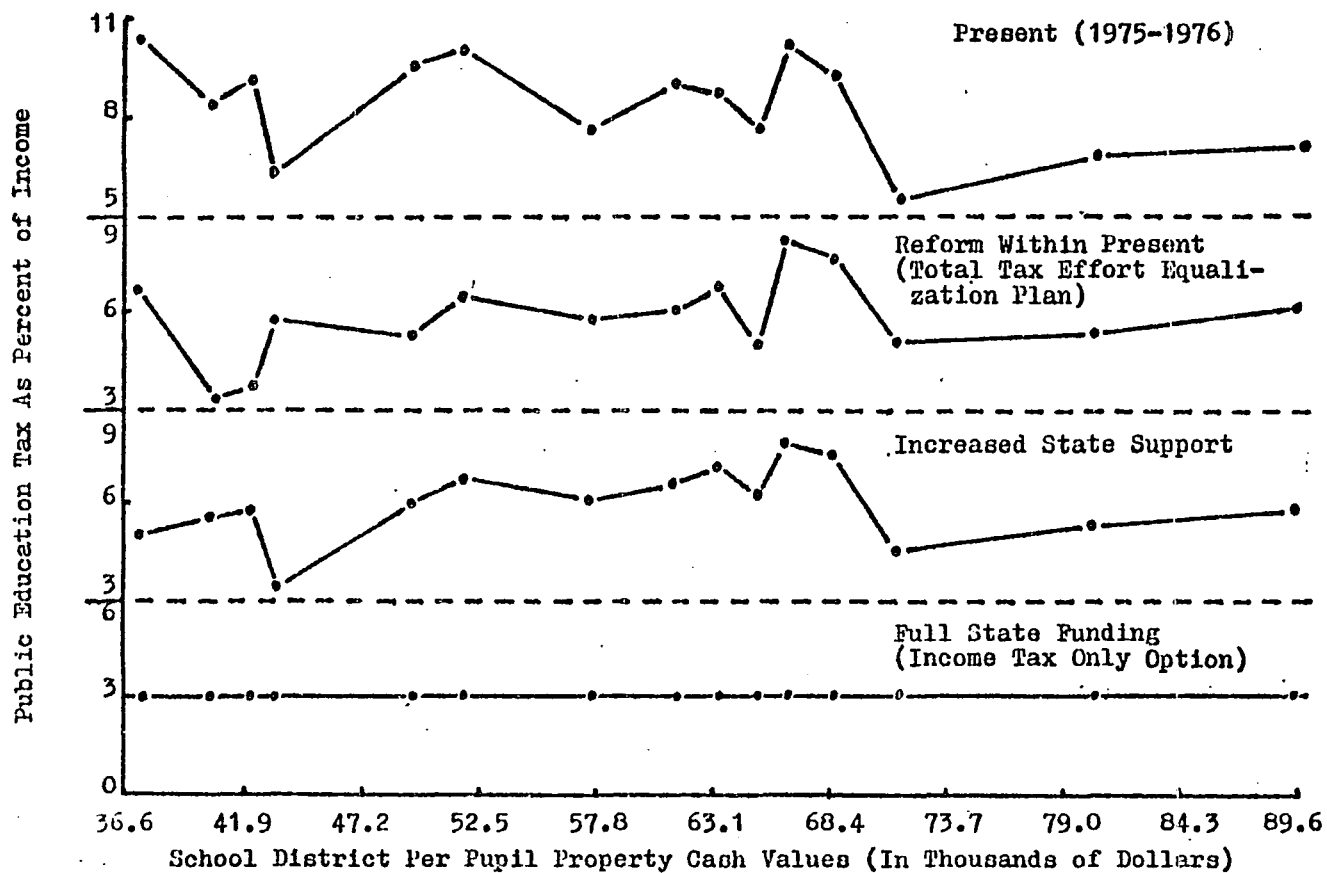


Figure 44. Horizontal tax burden distributions--school finance alternatives: scattergrams of public education tax as percent of income and per pupil property cash values, "Taxpayer 2."

tax-based state funds to public education. Further increases in the level of state support to school districts would further reduce the existing horizontal tax burden distribution inequities. Because of the increased level of state equalization aid, the inverse linear relationship between horizontal tax burden distribution and per pupil property cash values would become statistically insignificant. (Table XX and Figure 36) Therefore, under the increased state support alternative public education taxes as percent of income of equally-circumstanced taxpayers would not be determined by per pupil property cash values of school districts.

Comparative analysis of the full state funding alternative (income and statewide property taxation option) indicates that the horizontal tax burden distribution inequities are evident. Even though these horizontal tax burden inequities are insignificant, relative to the present situation, they would occur due to the state property tax refund criterion and municipal overburden situation among the school districts. (Figure 38)

The levels of noneducation property taxation vary considerably among school districts. This would result in different proportions of the property tax refund being applied as a credit toward statewide public education property taxation. Concurrently, depending upon the municipal overburden ratios of their respective school districts, equally-circumstanced taxpayers would be

burdened with unequal levels of public education taxation. The implication for the full state funding (income and statewide property taxation option) is that the state property tax refund distribution criterion, which does not use municipal overburden ratios as a factor, would cause definite horizontal public education tax burden distribution inequities for taxpayers with annual incomes below \$15,000.00

The comparative analysis of the horizontal tax burden distribution patterns under two of the full state funding alternatives (income and statewide business property taxation option and income taxation only option) indicate that there would be no horizontal tax burden distribution inequity. Under both of these full state funding alternatives, public education tax burden distribution among equally-circumstanced taxpayers would be equal. (Figures 40, 42 and 44)

#### 4. Vertical Tax Burden Distribution

The comparative analysis of vertical tax burden distribution is based on the differences in magnitude of the tax burden progressivities among school finance alternatives considered by this study. As previously discussed, analysis indicates that under the present financing scheme (1975-1976) taxpayers with relatively smaller incomes and larger families are burdened with greater public education taxes. The regression coefficient shows the vertical tax burden to be slightly regressive. (Table XXI and Figures 16 and 45) This coefficient is not

TABLE XX

STATISTICAL INDICATORS--INDEPENDENT VARIABLE:  
TAXPAYER FEDERAL INCOME TAX RANKINGS

Public School Finance Alternatives	Dependent Variable	
	Vertical Tax Burden Distribution (Public Education Tax As % of Income)	
	r	b
<u>Present('75-'76)</u>	-.08*	-.006
<u>Reform Within Present</u>		
a.Foundation Phase- In Plan	+.07*	+.005
b.Local Guaranteed Yield Plan	+.15*	+.010
c.Total Tax Effort Equalization Plan	+.29*	+.019
d.Available Wealth Equalization Plan	+.05*	+.003
<u>Increased State Support</u>	+.45	+.032
<u>Full State Funding</u>		
a.Income and State- wide Prop. Taxation	+.91	+.110
b.Income and State- wide Business Prop. Taxation	+.99	+.140
d.Income Taxation Only	+.99	+.170

\*Not significant at the 0.05 significance level.

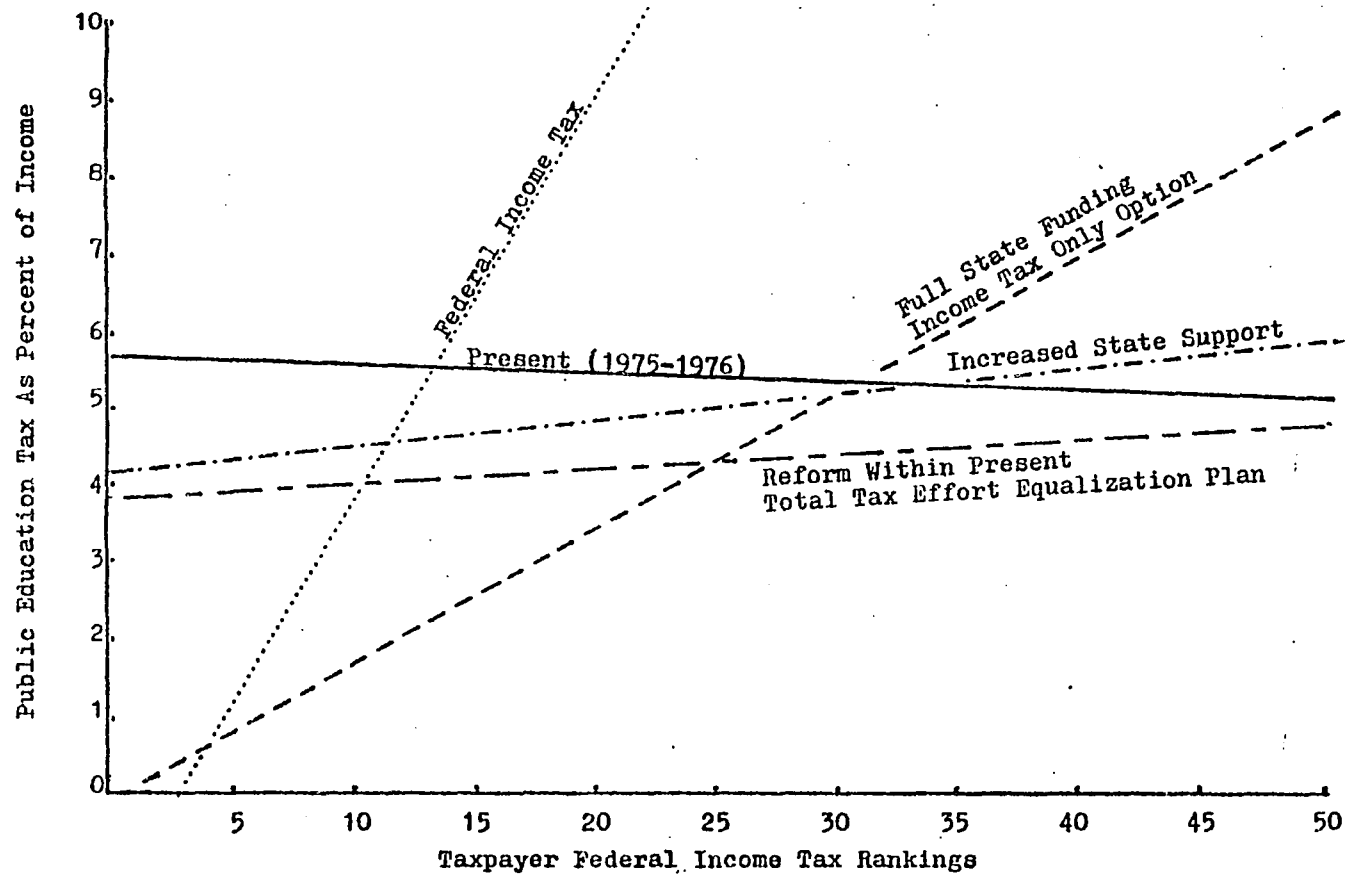


Figure 45. Vertical tax burden distribution--school finance alternatives: regression slopes of public education tax as percent of income and federal income tax rankings.

statistically significant. Furthermore, substantial variations in tax burdens among taxpayers weakens the plausibility of a proportional vertical tax burden distribution pattern. Therefore the vertical tax burden distribution under the present financing scheme is a no-pattern distribution in terms of regressivity-progressivity continuum.

The analysis of the relative changes in vertical tax burden distribution which the alternative school financing model would bring indicates that all of the reform within the present system plans, except the total tax effort equalization, would bring no significant changes in the existing no-pattern vertical tax burden distribution. (Table XXI and Figures 10, 24 and 32) Under the total tax effort equalization plan the vertical tax burden distribution would become more progressive than the present situation. However, the vertical tax burden distribution indicated by the positive regression coefficient is not substantial enough to indicate a strong progressivity-based public education financing system. (Figures 28 and 45)

Analysis of vertical tax burden distribution under increased state support indicates that, in comparison to the present situation, taxpayers with relatively larger incomes and smaller families would be burdened with greater public education taxes. The regression coefficient

indicates a change toward a more progressive vertical tax burden structure, affected by increased state support from 30 to 40 percent. Evidently a movement toward greater reliance on the ability-to-pay revenue sources to finance public schools by further increasing the level of state support to public schools would increase the progressivity of the vertical tax burden distribution pattern. This finding would justify further increases in the level of state support to finance public schools. (Table XXI and Figures 27 and 45)

A comparative analysis of the vertical tax burden distribution patterns under the three full state funding alternatives indicates that, relative to the present financing system and all of the previously-presented alternatives, full state funding alternatives would best accomplish progressive vertical tax burden distributions. (Table XXI and Figures 39, 41, 43 and 45) Under the income and statewide property taxation option of the full state funding alternative, a fairly strong progressive public education taxation would result. However, there are irregular data point distributions at the lower income levels resulting from the renter/owner-based bias of state property tax refund criteria. (Figure 39) Furthermore, as indicated by the regression coefficient in Figure 39, the level of progressivity of this full state funding option, relative to other full state funding options, would be lower due to the regressive nature of

residential property taxation. The income and statewide business property taxation and the income taxation only full state funding options exemplify that a greater equity-based vertical tax burden distribution structure may result from the elimination of residential property taxation for public education purposes. (Figures 41, 43 and 45)



## CHAPTER IX

### SUMMARY AND CONCLUSIONS

It has been more than 40 years since Henry C. Morrison (1930) proposed that the financing of public schools in many states is not based on equity in tax burden distributions. Since then there have been many attempts to solve the problem of school district fiscal disparities. However, most of the research concentrated on formulating alternative school finance models based on school districts' fiscal behavior, but avoided analyzing the impacts of these models on the individual taxpayer-voter. The basic intention of this dissertation research has been to construct an analytic model to test the school finance alternatives' impact on the individual taxpayer-voter from a tax burden redistribution perspective.

The primary focus of this research has been the development of a policy analysis paradigm to test tax burden distributive impacts of various school finance alternatives in the State of Oregon. A secondary intent has been the analysis of the 1975-1976 public education financing scheme from a school district profile perspective. The school district profile and the tax burden distribution-related findings of this study elicit policy implications for state and local level policy developers and decision makers.

The analysis of the present system emphasized categorization of the socio-economic and fiscal profiles of

school districts. The property and income wealth of the school districts was presented as were school district property tax rates and per pupil operational expenditures. The municipal overburden issue was presented as an important school district profile category. In conjunction with the municipal overburden issue, school district teacher/student and enrollment ratios were put forward. The political support variable (measured in terms of "Yes-No" ratios of the school district budget elections of 1975) was presented and tested against the fiscal variable (per pupil state aid as percent of operational expenditures).

With the exception of per pupil property cash values and school district property tax rates\* the school district profile data was used in a non-comparative manner to indicate and analyze the statistical results of the stepwise multiple regression of the 1975-1976 school district data.

The school district property and income wealth-related findings of this research support the previous studies (Sacks, 1973, Ladd, 1975 and Gatti, 1976) which found that the property wealth of school districts do not necessarily coincide with the level of residential aggregate incomes. Since state aid to school districts

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\*School district property cash values and property tax rates are used comparatively through all of the financing alternatives except full state funding.

is based on the property wealth of school districts, the ramifications of this situation would be state contribution, vis-a-vis aid distributive criteria, to the existing public school cost burden distribution inequities. (Grubb, 1971, and Muller, 1973) The major policy implication of this finding is that the state aid distributive criterion should be restructured with consideration given to school district income, as well as property, wealth. Such policy change would minimize the existing property wealth-based state aid distribution inequities.

Analysis of the relationship between per pupil property cash values and property tax rates of school districts indicates that the higher the per pupil property wealth of a school district, the lower would be the property tax rate needed to finance public schools. Furthermore, this study strongly supports previous research (James, 1966 and Weiss, 1970) which concluded that the per pupil property wealth of a school district, as a variable, greatly contributes to the determination of the operational expenditure levels of school districts. That is to say, the greater the per pupil property cash value of a school district, the greater would be the per pupil operational expenditures in that district. Despite the fact that both these variables (per pupil operational expenditures and property tax rates) are correlated with per pupil property cash values, there is no statistically significant

relationship between per pupil operational expenditures and school district property tax rates. This indicates that the level of operational expenditures in a school district is not determined by the level of property tax rates.

A stepwise multiple regression analysis of the municipal overburden situation in the sample school districts indicates that two variables, the level of population per pupil and number of pupils per teacher, significantly correlated with the level of noneducation property taxation. This finding has clear urban-rural locational connotations. Urban areas with relatively higher population densities and low-income population concentrations require relatively higher tax efforts to finance education-related public services. Consequently, within the limitations of the property tax base, the range of property taxation for public schools in urban areas is rather limited. Thus the urban school district's capability to exert heavier tax efforts to increase its education standard is constrained. This situation has been exemplified by the significant positive linear correlation between the municipal overburden indicator and the number of pupils per teacher. Therefore, in school districts where property taxation for public schools comprises a relatively lower percent of total property taxation in the district, the greater would be the number of pupils per teacher.

If one assumes that the variable (number of pupils per teacher) is an acceptable criterion of quality of education, this finding connotes that urban school districts with relatively higher municipal overburden, which also house a relatively greater student population with special education needs, would have to provide public educational services below the standards (measured in terms of pupil/teacher ratios) of suburban and rural school districts. This argument, however debatable, contains a policy suggestion pertaining to the state aid distribution criterion. In addition to the aforementioned criterion of property and income measurement of school districts' wealth as a factor in distributing state aid to school districts, the inclusion of special education need as a factor would greatly contribute to the effort to minimize existing state aid distribution inequities.\*

To analyze the political support criterion under school district profiles, the variable (percent voted "Yes" in 1975 school district budget elections) was tested against the remaining school district profiles variables. The stepwise regression indicates that the fiscal variable (per pupil state aid as percent of per

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\*As indicated by the 1978 Legislative Revenue study, the special education needs of school districts vary significantly. It was suggested in a Legislative Revenue Office staff report to the Oregon Educational Coordinating Commission that, during the 1979 Legislative session, consideration be given to funding special education as an earmarked cost in Basic School Support. ("Legislative Revenue Office, Elementary and Secondary School Finance, 1979." Legislative Issues, April, 1978, p.3)

pupil operational expenditures) is positively related to the political support variable. This would mean that the larger the portion of the school districts' operational expenditure budget from state aid, the greater the probability of budget approval by the voters.

An intervening variable, the size of the budget, is definitely related to the level of per pupil expenditures and state aid receipts of the school districts. The size of the budget presented for voter approval may directly influence the voter behavior. This may cause the relationship between voter support and the proportion of the expenditure from state aid to be significant. This conclusion supports the findings of Richard Lucier (1971) and B.F.Saalfeld (1972) who concluded that the higher the cost of public education, the higher the probability of its exceeding the preference function of the median voters. Such facts as the level of expenditures and state aid may not be known to the voter so as to influence his/her decision. It may be more realistic to assume that per pupil expenditures and state aid affect the size of the budget to be approved by the voter. Increasing the level of state support to finance public schools would result in larger proportions of school districts' operational expenditures being provided from state sources. This in turn would result in relatively smaller school district budget increases to be approved by the voters.

Consequently, this would increase the probability of voter approval in school district budget elections. A major policy implication of this finding is that further increasing the state support level of public education may result in a higher level of voter approval of school district budget increases.\*

#### Tax Burden Distribution--Policy Implications

Prior to an analysis of the public education tax burden distributive aspects of alternative models to finance public schools in the State of Oregon, the inter-governmental and multi-level financing features of the public education funding system should be explained. Taxpayers in Oregon pay various taxes to different government and jurisdictional levels to finance public education functions. This situation has certain implications over the level of tax burden on the local taxpayer, depending upon the level of state share in financing public schools. Presently it is evident that the state of Oregon's share in financing public schools and the relatively progressive state income tax schedules are not sufficient enough to override the regressive impacts of the local school district property taxes on the individual taxpayers. One implication clearly explained by William Anderson is that

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\*The actual testing of this will be possible after a few years of implementation of the increased level of state support to public education, beginning with the 1978-1979 school year.

if the state's share in financing public schools were increased, local taxpayers would not be so burdened.

The fact is that increasing the state share might well reduce local taxes, but that fact tells us nothing about overall (public education) tax loads. Taxes paid locally might be reduced but taxes paid to the state might then be increased. Political rhetoric sometimes generates the illusion that there is a mystical body of "other taxpayers" in the state who would pick up burdens we cast off: the forlorn reality is that those other taxpayers are just ourselves in other guises. (Anderson, 1977, p.2)

Both the state government and the local school districts share the responsibility to finance Oregon's public schools. During the 1975-1976 school year the state contributed 30 percent and the school districts 70 percent of the total cost of public school operations. Effective during the 1978-1979 school year, the 1977 Legislature increased the state's share to 40 percent. The 1979 session of the Oregon State Legislature may consider further increasing the level of state support to public schools to 50 percent, as well as increasing the level of state equalization grants. However, the solution to tax burden inequities, as well as inequities in educational opportunity, may not lie solely in the aforementioned increases. It may be necessary to change the criterion whereby the state aid is distributed to the school districts. The study by Pierce, et al, (1975) of the University of Oregon responded to that particular problem by designing four different state aid distribution



formulas based on school district property wealth and tax effort measurement criteria. These four school finance options were employed by this study and identified as the reform within the present system alternative.

The major finding of the reform within the present system indicates that all of the options, to varying marginal degrees, tend to equalize the fiscal capacities of school districts. However, implementation of the options under the reform within the present system alternative would not alter the existing tax burden distribution inequities. Under these financing options, as well as under the present financing form, one's public education tax burden is determined by his/her residential location. More than the income or the property wealth of the individual, the aggregate property wealth of the school district determines his/her public education tax burden. Consequently, two equally-circumstanced families located in different school districts are not treated equally. Furthermore, families with differential incomes and property wealth are not treated differentially to distribute the tax burden progressively. Conclusively, it is the final evaluation by this author that reforms within the present system options' marginal policies, aimed toward fiscal equalization among school districts, are not effective measures to reduce the existing tax burden distribution inequities among individual taxpayers.

The increased state support alternative developed by the Oregon State Legislature is based on increasing the state's share from 30 to 40 percent to support public schools. The Legislature identified the following problems as being the three main reasons to move toward a centralized school financing system: (1) inability of the present state support and equalization aid level to equalize the differences in fiscal capacities among school districts; (2) growing problems with local school district special levy and budget elections; and (3) increased reliance on the local property tax as a main revenue source by local jurisdictions. To further alleviate these problems, the 1979 State Legislature may consider increases in the level of state support. The question remains: would further increase in the state support level entail increases in state taxes? Probably. However, since the increase in state support level is marginal, the state may be able to finance it through internal fund reallocations, provided there would be no property tax limitation or refund measure in effect.\*

Presently there is a well-prepared and well-developed taxpayers' revolt against property taxation. Actualization of a property tax limitation proposal in Oregon (Property

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\*"Based on existing revenue and expenditure projections of the Executive Department, a 50 percent level of Basic School Support cannot be achieved in 1979-1981 unless there is a substantial shifting of funds from other existing programs." (State of Oregon Legislative Revenue Office, April, 1978, p.2)

Tax Limitations Measure #6\*) would greatly curtail the local financing of public schools, especially when the local property taxation is the primary means of raising funds for school districts. The state may have to increase its level of support to public education more than the 50 percent level to be considered by the 1979 State Legislature. The increase in state support needed to finance public schools adequately, resulting from the property tax limitation measure, may require, in the long run, greater state involvement in funding public education. Due to the revenue formation procedures-related limitations of Measure #6, and to a lesser degree of Measure #11, the financing of public schools may become an income tax-based near-to-total state funding system. When this occurs, the degree to which the resulting tax burden distribution indicates increased equity (vertical or horizontal) may depend on the structure of the state tax instrument employed to replace local property tax-based revenues. The findings of this study suggest that establishment of an income tax-based full state funding school

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\*Measure #6--proposed constitutional amendment limits ad valorem real property taxes to 1½% "full cash," defined as 1975 assessed value, or appraised value on later sale or new construction. Allows maximum 2% annual inflation increase. Requires two-thirds vote of each house for new or increased state taxes; two-thirds popular vote required for special local taxes; prohibits new ad valorem, sales or transaction taxes on real property. (Voters Pamphlet, State of Oregon, General Election November 7, 1978, p.37)

finance system would eliminate horizontal tax burden distribution inequities and establish a relatively progressive public education tax system. Since the political possibility of increasing the level of state income taxation or the establishment of new taxes would be greatly reduced by the adoption of Measure #6, the State will have to re-allocate funds from other state public services and/or lower existing educational standards to reduce the operational costs of public schools.

The adoption of Measure #6 or the counter proposal, Property Tax Relief Measure #11,\* coupled with an increase of state support to public schools to 50 percent by the 1979 Legislature would create a school finance model which would reduce the horizontal tax burden distribution inequities and increase the progressivity of the vertical tax burden distribution structure. Findings of this study evidence that increasing the level of state support and reducing the usage of local property taxes to finance public schools would result in a significant movement toward an equity-based school financing system.

Regardless of which property tax measure (#6 or #11)

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\*Measure #11--proposed constitutional amendment to reduce tax payable by homeowners by 1½% up to \$1,500.00. Provides comparable relief to renters. Limits state and local expenditures. Requires two-thirds legislative vote for certain tax measures. Refunds remaining state surplus to income taxpayers. Freezes assessed values for one tax year. Preserves referendum right on local government tax measures. (Voters Pamphlet, State of Oregon General Election, November 7, 1978, p.66)

might be approved by the voters in the November 1978 election, the major findings of this study and their significance thereupon would be a useful policy instrument for local and state public education policy developers and decision makers. The trend of public school finance in Oregon is toward centralization, whether it is based on ability-to-pay taxes or statewide property taxes. The choice of Oregon voters in the November election may determine the type of revenue source to finance public schools as well as the magnitude of movement toward centralization of public school finance functions.\*

The findings of this research coincide with Ronald Grieson's (1974) conclusion that any shift from local to statewide (property or non-property) taxes would definitely affect the distribution of the cost of public education. Furthermore, this study supports Donald Phares' (1973) conclusion that when the regressivity of the local sector is excluded, many state revenue systems would become relatively more progressive. Concurrently, by broadening the property tax base to encompass the state as a whole, as proposed in two of the full state funding models,

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\*Both Measures #6 and #11 were defeated at the polls in the November 6, 1978 referendum. Although the measures were defeated the results of the referendum do not indicate taxpayer-voter satisfaction with the present local property taxation system. The results of the election reveal that the voters want a property tax reform, but were not satisfied with the proposed reforms. The responsibility of the 1979 State Legislature will be to design an acceptable property tax package.

greater tax burden distribution equalization could be effected. Oregon, as well as other states, has in the past yielded the property tax base to local jurisdictions. It is within the state's constitutional powers to use the property tax base for public education finance purposes.\* However, the ongoing taxpayer dissatisfaction with property taxation may curtail the political feasibility of establishing statewide property as a tax base for public education purposes.

It is probable that increased reliance on the income-based state taxation to finance public schools will be the outcome of the recent taxpayer revolt against property-based taxes. Within the parameters of this study, the resultant statewide ability-to-pay-based revenue structure would be considered the ideal public school system: centrally-financed and locally-administered.\*\* Nonetheless, its implementation would result in changes in public education-related intergovernmental administrative and fiscal responsibilities.

Rather than concentrating on how to raise revenues, the school district administrators would be able to

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\*Governor McCall's Property Tax Reform Plan of 1973 was based on this rationale. However, the state legislative power could not supercede voter referendum power when McCall's property tax measure was presented for election approval. The measure was overwhelmingly rejected in the May 1973 election.

\*\*Henry C. Morrison suggests that the most efficient and equitable method to finance public education would be through a statewide income tax. (Morrison, 1930)

concentrate on efficient usage of a given set of revenues. Under the increased or full state funding alternatives, the nature of the local school district's autonomy may be improved. The full state funding alternative would include political access and control possibilities for the taxpayer-voter. It would allow individuals to participate directly in administrative decision-making processes at the school district level, and indirectly in the decisions of financing at the state legislative level. This may satisfy the objective of centralizing financing while preserving decentralized administrative decision making. "There exists the possibility that local decision making could be diluted or impaired, although there is no reason why a high level of state funding is not compatible with substantial local control over such basic educational concerns as curriculum, personnel, and the like." (Rossmiller, 1973, pp.64-65)

Constitutionally, public education is a state government responsibility. Decentralization of this responsibility by delegation of administrative as well as financial authority to local school districts, with externalities over school district boundaries and nationwide ramifications,\* is basically a matter of choice between

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\*External to the individual student and his/her family are public education-related benefits to others in forms of positive effects on productivity, provision of a minimum standard of citizenship and promotion of equality of opportunity. (Davis, 1970, p.78)

political ideology and public responsibility. The problems inherent to financing public education may require concessions and compromises from both local autonomy supporters and centralists by leaving the administration of public schools to the local jurisdictions and centralizing the financing of their functions, preferably at the state level.

The foregoing conclusions are not intended as an all-inclusive treatment of political, legal and socio-economic details related to the problems of financing public schools. The primary effort and direction of this study and the conclusions thereupon have been the systematic analyses of tax burden distribution components of the alternatives to finance public schools, and the assessment of their comparative advantages and disadvantages.

In summary, the major accomplishments and contributions of this study are, first, the illustration and presentation of the present tax burden distribution inequities in financing public education within and among school districts in the Portland metropolitan area; and, secondly, the provision of information and analysis regarding changes which may occur in the tax burden distribution structure resulting from changes in the means by which public schools are financed in the State of Oregon. In accordance with the primary objectives of this research, the information and the analyses presented may be used by decision makers in developing and formulating policies



to decrease the probable economic and political effects of different public school financing alternatives. Concurrently, the results of this study provide the policy-makers with a systematic policy guidance and direction specifically concerning the tax burden distributive functions of governments involved directly or indirectly with financing public educational goods and services. Relative to the importance given the criterion of equity in taxation, the significance of the results of this study is relevant and complementary to the current struggle to establish an equity-based public school financing system.

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## APPENDIX A

### Definitions and Formulas

The following are definitions of certain school finance-related terminology used in this study.

Per Pupil: resident-weighted pupil criterion based on differential weights given to elementary and secondary school students. As used in the state aid formulas, under this system of weights an elementary school student is counted as 1.0 pupils whereas a secondary school student equals 1.3 pupils to reflect the higher cost incurred in providing educational services to secondary level students. (State of Oregon Legislative Revenue Office, 1976, p.1)

Property Cash Value Per Pupil: represents school districts' residential, commercial and industrial property wealth as measured by true cash values per pupil.

State Aid Per Pupil: per pupil budgeted Basic School Support and special state supported educational program revenues distributed to school districts.

Equalization State Aid Per Pupil: per pupil state revenues distributed to school districts from the budgeted Basic School Support Funds, based on the level of per pupil property cash values of school districts. Equalization payments through state sources are designed to provide property wealth differentiation-based financial support to reach a standard per pupil expenditure level among school districts.

School District Property Tax Rate: summed local, county and Intermediate Education District property tax rates indicating

the total property tax rates per \$1,000.00 of the respective school districts' property cash values.

Total Operational Expenditures Per Pupil: per pupil annual operational expenditures of school districts, including net operating expenditures and transportation expenditures.

Foundation Equalizing (Strayer-Haig): based on the assumption that the state and local school districts will finance a minimum foundation program of education by a partnership plan. Under this plan local districts make a required minimum local tax effort in proportion to their taxpaying ability. The state will provide the difference between the cost of the guaranteed minimum program and the amount of funds per unit of need which are apportioned in inverse relation to the taxpaying ability per unit of need of local school districts.

Power Equalizing (Benson-Coons): power equalization is a commitment by the state to the principle that the relationship between effort and provision of every school district will be the same irrespective of wealth and that the district is to determine the effort. Under power equalizing, the school district budget is locally determined; the state pays a proportion, inverse to the school district's wealth, of that budget. (Coons, 1970, pp. 163 and 202).

The following are the formulas indicating the procedures of calculations for state property tax refund and state income tax payments.

State Property Tax Refund Computations:

(1) Homeowner

$$\frac{\text{Property Tax} - (\text{Refund} \text{--varies with level of income})}{\text{X (Percent for public education} \text{--varies with school district municipal overburden ratios)}} = \text{Net property tax for public education.}$$

(2) Renter

$$\frac{\text{Rent} \times .17}{\text{X (Percent for public education} \text{--varies with school district municipal overburden ratios)}} = \text{Net property tax for public education.}$$

State Income Tax Payments Computations\*:

$$\text{Income} \text{ -- } \frac{(\text{Family Size} \times 750) + (13\% \text{ of Income} \text{--minimum } 1050, \text{ maximum } 1500) + (\text{Federal Income Tax} \text{--varies with income and family size})}{\text{X appropriate rate}} = \text{Taxable income}$$
  

$$\text{X appropriate rate}^{**} = \text{State Income Tax}$$
  

$$\text{X percent for public education}^{***} = \text{Income Tax for public education.}$$

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\*Based on 1976 State Income Tax Rate Schedules.

\*\*See Appendix C for the appropriate tax rate schedules under various school financing alternatives.

\*\*\*School Finance Alternatives = the Present and the Reform Within the Present--33.2%; the Increased State Support--44.3%; and the Full State Funding--62.3%.

## APPENDIX B

### Statistical Terminology\*

Pearson Product Moment Correlation (r): a ratio which expresses the extent to which changes in one variable are accompanied by, as depend upon, changes in the second variable.

$$r = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\left[ \sum_{i=1}^n (\bar{X}_i - \underline{x})^2 \right]^{1/2} \left[ \sum_{i=1}^n (\bar{Y}_i - \underline{y})^2 \right]^{1/2}}$$

The Coefficient of Determination ( $r^2$ ): the percentage held in common of the total variation of the two variables.

The Slope of the Regression (b): the vertical distance of all data points are minimized through least squares regression procedures (Regression Coefficient).

$$b = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\left[ \sum_{i=1}^n (\bar{X}_i - \underline{x})^2 \right]^{1/2} \left[ \sum_{i=1}^n (\bar{Y}_i - \underline{y})^2 \right]^{1/2}}$$

The Intercept of the Slope (a): the value at the point where the regression slope line crosses the vertical axis.

$$a = \frac{Y - b x}{N}$$

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\*Source: Nie, et al, 1975, pp. 276-300; and Jones, 1971, pp. 123-134 and 173-177.

Significance (F): measurement of risk and significance with N-2 degrees of freedom.

$$F = \frac{r^2 (N - 2)}{1 - r^2}$$

APPENDIX C  
Income Tax Rate Schedules

Present (1975-1976);  
Reform Within the Present;  
Increased State Support  
Households

State Annual Income

0	-	\$ 1,000
\$ 1,000	-	\$ 2,000
\$ 2,000	-	\$ 4,000
\$ 4,000	-	\$ 6,000
\$ 6,000	-	\$ 8,000
\$ 8,000	-	\$10,000
\$10,000	-	+

	4%	
\$ 40	+ 5% above	\$ 1,000
\$ 90	+ 6% above	\$ 2,000
\$210	+ 7% above	\$ 4,000
\$350	+ 8% above	\$ 6,000
\$510	+ 9% above	\$ 8,000
\$690	+10% above	\$10,000

Singles

0	-	\$ 500
\$ 500	-	\$ 1,000
\$ 1,000	-	\$ 2,000
\$ 2,000	-	\$ 3,000
\$ 3,000	-	\$ 4,000
\$ 4,000	-	\$ 5,000
\$ 5,000	-	+

	4%	
\$ 20	+ 5% above	\$ 500
\$ 45	+ 6% above	\$ 1,000
\$105	+ 7% above	\$ 2,000
\$175	+ 8% above	\$ 3,000
\$255	+ 9% above	\$ 4,000
\$345	+10% above	\$10,000

Full State Funding:  
Income and Statewide  
Property Taxation\*

State Annual Income

0	-	\$ 1,000
\$ 1,000	-	\$ 2,000
\$ 2,000	-	\$ 4,000
\$ 4,000	-	\$ 6,000
\$ 6,000	-	\$ 8,000
\$ 8,000	-	\$10,000
\$10,000	-	+

Households

	4%	
\$ 40	+ 5% above	\$ 1,000
\$ 90	+ 7% above	\$ 2,000
\$230	+ 8% above	\$ 4,000
\$390	+10% above	\$ 6,000
\$590	+12% above	\$ 8,000
\$830	+13% above	\$10,000

Singles

0	-	\$ 500
\$ 500	-	\$ 1,000
\$ 1,000	-	\$ 2,000
\$ 2,000	-	\$ 3,000
\$ 3,000	-	\$ 4,000
\$ 4,000	-	\$ 5,000
\$ 5,000	-	+

	4%	
\$ 20	+ 5% above	\$ 500
\$ 45	+ 7% above	\$ 1,000
\$115	+ 8% above	\$ 2,000
\$195	+10% above	\$ 3,000
\$295	+12% above	\$ 4,000
\$415	+13% above	\$ 5,000

\*It is estimated that a 26% increase in state income tax levels would balance the revenues lost from the reduced level of property taxation for public education.

State Annual Income

0	-	\$ 1,000
\$ 1,000	-	\$ 2,000
\$ 2,000	-	\$ 4,000
\$ 4,000	-	\$ 6,000
\$ 6,000	-	\$ 8,000
\$ 8,000	-	\$10,000
\$10,000	-	+

0	-	\$ 500
\$ 500	-	\$ 1,000
\$ 1,000	-	\$ 2,000
\$ 2,000	-	\$ 3,000
\$ 3,000	-	\$ 4,000
\$ 4,000	-	\$ 5,000
\$ 5,000	-	+

State Annual Income

0	-	\$ 1,000
\$ 1,000	-	\$ 2,000
\$ 2,000	-	\$ 4,000
\$ 4,000	-	\$ 6,000
\$ 6,000	-	\$ 8,000
\$ 8,000	-	\$10,000
\$10,000	-	+

0	-	\$ 500
\$ 500	-	\$ 1,000
\$ 1,000	-	\$ 2,000
\$ 2,000	-	\$ 3,000
\$ 3,000	-	\$ 4,000
\$ 4,000	-	\$ 5,000
\$ 5,000	-	+

Full State Funding:  
Income and Statewide Business Property Taxation\*  
Households

5%
\$ 50 + 7% above \$ 1,000
\$120 + 8% above \$ 2,000
\$280 + 9% above \$ 4,000
\$460 +11% above \$ 6,000
\$670 +12% above \$ 8,000
\$910 +13% above \$10,000

Singles

5%
\$ 25 + 7% above \$ 500
\$ 60 + 8% above \$ 1,000
\$140 + 9% above \$ 2,000
\$230 +11% above \$ 3,000
\$335 +12% above \$ 4,000
\$455 +13% above \$ 5,000

Full State Funding:  
Income Taxation  
Only\*\*

Households

6%
\$ 60 + 8% above \$ 1,000
\$ 140 +11% above \$ 2,000
\$ 360 +13% above \$ 4,000
\$ 620 +15% above \$ 6,000
\$ 920 +17% above \$ 8,000
\$1260 +20% above \$10,000

Singles

6%
\$ 30 + 8% above \$ 500
\$ 70 +11% above \$ 1,000
\$180 +13% above \$ 2,000
\$310 +15% above \$ 3,000
\$460 +17% above \$ 4,000
\$630 +20% above \$ 5,000

\*It is estimated that a 35% increase in state income tax levels would balance the revenues lost from the elimination of residential property taxation for public education. (Legislative Revenue Office, 1976)

\*\*It is estimated that a 92% increase in state income tax levels would balance the revenues lost from complete elimination of the property taxation for public education.

APPENDIX D  
Representative Taxpayer Data Base

Taxpayer Category			Property Status		Federal Income Tax
Rank*	Income	Family Size	Owner/ Renter	Value**	Payment as Percent of Income***
1	\$ 4,000	5	O	\$23,700	0
2	4,000	5	R	2,052+	0
3	4,000	4	O	22,600	0
4	4,000	4	R	2,016+	0
5	4,000	3	O	21,300	0
6	4,000	3	R	2,956+	0
7	4,000	2	O	20,000	2.20
8	4,000	2	R	1,896+	2.20
9	8,000	5	O	28,600	4.37
10	8,000	5	R	2,304+	4.37
11	8,000	4	O	25,600	5.89
12	8,000	4	R	2,268+	5.89
13	4,000	1	O	15,200	6.37
14	4,000	1	R	1,536+	6.37
15	8,000	3	O	25,600	7.49
16	8,000	3	R	2,208+	7.49
17	12,000	5	O	33,000	8.89
18	12,000	5	R	2,688+	8.89
19	8,000	2	O	24,000	9.24
20	8,000	2	R	2,148+	9.24
21	12,000	4	O	31,400	10.06
22	12,000	4	R	2,628+	10.06
23	12,000	3	O	29,600	11.27
24	12,000	3	R	2,556+	11.27
25	18,000	5	O	42,700	12.19
26	12,000	2	O	27,800	12.60
27	12,000	2	R	2,472+	12.60
28	8,000	1	O	18,200	13.02
29	8,000	1	R	1,752+	13.02
30	18,000	4	O	40,600	13.11
31	18,000	3	O	38,400	14.22
32	18,000	2	O	36,200	15.19
33	12,000	1	O	21,100	16.07
34	12,000	1	R	2,328+	16.07
35	25,000	5	O	65,900	16.64

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\*Taxpayer Category rankings are based on federal income tax payments.

\*\*Taxpayer property status values are updated to 1975 from 1970 census information. (U.S. Department of Commerce, Bureau of the Census, 1971)

\*\*\*Rankings on equal payments are based on family size and/or property status.

+Annual rent values



Taxpayer Category			Property Status		Federal Income Tax
Rank	Income	Family Size	Owner/ Renter	Value	Payment as Percent of Income
36	\$25,000	4	0	\$62,700	16.85
37	25,000	3	0	59,200	17.71
38	25,000	2	0	55,700	18.67
39	18,000	1	0	27,500	19.47
40	35,000	5	0	88,200	21.07
41	35,000	4	0	84,000	21.85
42	35,000	3	0	79,200	22.68
43	35,000	2	0	74,400	23.52
44	25,000	1	0	42,200	23.88
45	35,000	1	0	55.200	29.33